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1920/21*

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# *The Bulletin of the University of Minnesota*

*The College of Dentistry  
Announcement for the Year  
1920-1921*



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1920							1921													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
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4	5	6	7	8	9	10	2	3	4	5	6	7	8	3	4	5	6	7	8	9
11	12	13	14	15	16	17	9	10	11	12	13	14	15	10	11	12	13	14	15	16
18	19	20	21	22	23	24	16	17	18	19	20	21	22	17	18	19	20	21	22	23
25	26	27	28	29	30	31	23	24	25	26	27	28	29	24	25	26	27	28	29	30
..	..	..	..	..	..	..	30	31	..	..	..	..	..	31	..	..	..	..	..	..
AUGUST							FEBRUARY							AUGUST						
1	2	3	4	5	6	7	..	1	2	3	4	5	..	..	1	2	3	4	5	6
8	9	10	11	12	13	14	6	7	8	9	10	11	12	7	8	9	10	11	12	13
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29	30	31	..	..	..	..	27	28	..	..	..	..	..	28	29	30	31	..	..	..
SEPTEMBER							MARCH							SEPTEMBER						
..	..	..	1	2	3	4	..	1	2	3	4	5	..	..	1	2	3	4	5	6
5	6	7	8	9	10	11	6	7	8	9	10	11	12	4	5	6	7	8	9	10
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26	27	28	29	30	..	..	27	28	29	30	31	..	..	25	26	27	28	29	30	..
OCTOBER							APRIL							OCTOBER						
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3	4	5	6	7	8	9	3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	17	18	19	20	21	22	23	16	17	18	19	20	21	22
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31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..
NOVEMBER							MAY							NOVEMBER						
..	1	2	3	4	5	6	1	2	3	4	5	6	7	..	..	1	2	3	4	5
7	8	9	10	11	12	13	8	9	10	11	12	13	14	6	7	8	9	10	11	12
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21	22	23	24	25	26	27	22	23	24	25	26	27	28	20	21	22	23	24	25	26
28	29	30	..	..	..	..	29	30	31	..	..	..	..	27	28	29	30	..	..	..
DECEMBER							JUNE							DECEMBER						
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5	6	7	8	9	10	11	5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	31	..	26	27	28	29	30	..	..	25	26	27	28	29	30	31

## CALENDAR

1920-1921

### 1920

September	18	Saturday	Payment of fees closes, except for new students
September	21-28	Week	Examinations for removal of conditions, and entrance examinations
			Registration period, Colleges of Science, Literature, and the Arts, and Agriculture, Forestry, and Home Economics
September	27-28		Registration days for all colleges not indicated above
September	28	Tuesday	Payment of fees for new students closes
September	29	Wednesday	Fall quarter begins, 8:30 a.m.
October	21	Thursday	Senate meeting, 4:30 p.m.
November	2	Tuesday	Election Day; a holiday
November	25	Thursday	Thanksgiving Day; a holiday
December	16	Thursday	Senate meeting, 4:30 p.m.
December	22	Wednesday	Fall quarter ends, 5:20 p.m.
December	22	Wednesday	Christmas vacation begins, 5:20 p.m.

### 1921

January	4	Tuesday	Christmas vacation ends, 8:30 a.m.
January	4	Tuesday	Winter quarter begins, 8:30 a.m.
February	12	Saturday	Lincoln's Birthday; a holiday
February	17	Thursday	Senate meeting, 4:30 p.m.
February	22	Tuesday	Washington's Birthday; a holiday
March	24	Thursday	Winter quarter ends, 5:20 p.m.
March	24	Thursday	Spring vacation begins, 5:20 p.m.
March	30	Wednesday	Spring vacation ends, 8:30 a.m.
March	30	Wednesday	Spring quarter begins, 8:30 a.m.
May	19	Thursday	Senate meeting, 4:30 p.m.
May	30	Monday	Memorial Day; a holiday
June	12	Sunday	Baccalaureate service
June	14	Tuesday	Spring quarter closes, 5:20 p.m.
June	15	Wednesday	Forty-ninth annual commencement
June	17-18		Registration days for summer session
June	20	Monday	Summer session begins
July	30	Saturday	Summer session closes

# THE COLLEGE OF DENTISTRY

## FACULTY

- MARION LEROY BURTON, Ph.D., D.D., LL.D., President<sup>1</sup>  
WILLIAM WATTS FOLWELL, LL.D., President Emeritus  
CYRUS NORTHIROP, LL.D., President Emeritus  
ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean, Professor of Theory and Practice of Dentistry, Dental Metallurgy  
BERT G. ANDERSON, D.D.S., Assistant Professor of Oral Surgery  
MOSES BARRON, B.S., M.D., Assistant Professor of Pathology  
RICHARD O. BEARD, M.D., Associate Professor of Physiology  
ELEXIOUS T. BELL, B.S., M.D., Associate Professor of Pathology  
PETER J. BREKHUS, B.A., D.D.S., Associate Professor of Crown and Bridge Work  
EDGAR D. BROWN, Phm.D., M.D., Associate Professor of Pharmacology  
LILLIAN COHEN, Ph.D., Assistant Professor of Chemistry  
OSCAR COOPerman, D.D.S., Assistant Professor of Prosthetic Dentistry and Oral Anatomy  
NORMAN J. COX, B.S., D.M.D., Assistant Professor of Operative Dentistry  
GEORGE M. DAMON, D.D.S., Professor of Prosthetic Dentistry and Oral Anatomy and Chairman of the Department of Oral Anatomy  
CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy  
MAX E. ERNST, LL.B., D.D.S., Associate Professor of Orthodontia  
CARL O. FLAGSTAD, D.D.S., Assistant Professor of Prosthetic Dentistry and Orthodontia  
ISAAC W. GEIGER, Ph.D., Assistant Professor of Chemistry  
HENRY S. GODFREY, D.M.D., Professor of Operative Dentistry  
ROBERT O. GREEN, D.D.S., Associate Professor of Operative Dentistry  
WILLIAM A. GREY, D.D.S., Assistant Professor of Oral Surgery  
CHARLES A. GRIFFITH, D.D.S., Associate Professor of Oral Surgery and Chairman of the Department of Oral Surgery  
ARTHUR T. HENRICI, M.D., Assistant Professor of Bacteriology  
ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology  
WILLIAM H. HUNTER, Ph.D., Associate Professor of Chemistry  
CLARENCE M. JACKSON, M.S., M.D., Professor of Anatomy  
LAUDER W. JONES, Ph.D., Professor of Chemistry  
FRANCIS B. KINGSBURY, Ph.D., Assistant Professor of Physiological Chemistry  
WILLIAM H. KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry  
RAY R. KNIGHT, B.A., M.D., Associate Professor of Roentgenology  
WINFORD P. LARSON, M.D., Professor of Bacteriology  
WILLIAM F. LASBY, B.A., D.D.S., Professor of Prosthetic Dentistry and Orthodontia and Chairman of the Department of Prosthetics

<sup>1</sup> Resigned July 1, 1920.

- HARRY C. LAWTON, D.D.S., Associate Professor of Prosthetic Dentistry, Orthodontia, Dental Metallurgy, and Secretary of the Faculty  
THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy  
HAROLD J. LEONARD, B.A., D.D.S., Assistant Professor of Oral Hygiene and Pathology, Superintendent of the School for Dental Hygienists, and Chairman of the Department of Oral Hygiene and Pathology  
JOSEPH M. LITTLE, D.D.S., Assistant Professor of Operative Dentistry  
ELMER J. LUND, Ph.D., Assistant Professor of Zoology  
ELIAS P. LYON, Ph.D., M.D., Professor of Physiology  
JESSE F. McCLENDON, Ph.D., Associate Professor of Physiology  
EVERETT E. MACGIBBON, D.D.S., Assistant Professor of Crown and Bridge Work  
FRANK H. MACDOUGALL, Ph.D., Associate Professor of Chemistry  
WILLIAM McDougall, D.D.S., Assistant Professor of Oral Surgery  
HERMAN A. MAVES, D.D.S., Professor of Oral Surgery  
RICHARD S. MAYBURY, D.D.S., Assistant Professor of Operative Dentistry  
HENRY F. NACHTRIEB, B.S., Professor of Animal Biology  
WILLIAM C. NAEGELI, D.D.S., Assistant Professor of Operative Dentistry  
HERBERT C. NELSON, D.D.S., Assistant Professor of Crown and Bridge Work  
FORREST H. ORTON, D.D.S., Professor of Crown and Bridge Work  
CARL OTTO, D.D.S., Assistant Professor of Crown and Bridge Work  
ALFRED A. PAGENKOPF, D.D.S., Associate Professor of Crown and Bridge Work  
MARK O. PATTRIDGE, D.D.S., Associate Professor of Operative Dentistry  
CARL H. PETRI, D.D.S., Assistant Professor of Operative Dentistry and Oral Anatomy  
CHAUNCEY J. V. PETTIBONE, Ph.D., Assistant Professor of Physiological Chemistry  
ANDREW T. RASMUSSEN, Ph.D., Assistant Professor of Neurology  
GEORGE W. REYNOLDS, D.D.S., Associate Professor of Crown and Bridge Work  
HAROLD E. ROBERTSON, B.A., M.D., Professor of Pathology  
WILLIAM A. ROLL, D.D.S., Assistant Professor of Crown and Bridge Work  
CHARLES E. RUDOLPH, D.D.S., Assistant Professor of Prosthetic Dentistry and Oral Anatomy, Superintendent of the Course for Dental Mechanics  
RICHARD E. SCAMMON, Ph.D., Professor of Anatomy  
FREDERICK H. SCOTT, M.B., Ph.D., D.Sc., Professor of Physiology  
JOSEPH E. SHELLMAN, D.D.S., Associate Professor of Operative Dentistry  
CHARLES F. SIDENER, B.S., Professor of Chemistry  
CHARLES P. SIGERFOOS, Ph.D., Professor of Zoology  
JOHN SUNDWALL, M.D., Professor of Hygiene and University Health Officer  
JOSEPH M. THOMAS, Ph.D., Professor of Rhetoric  
JAMES M. WALLS, D.M.D., Professor of Operative Dentistry and Head of the Department of Operative Dentistry  
OSCAR A. WEISS, D.M.D., Professor of Prosthetic Dentistry and Orthodontia. Head of the Department of Orthodontia

## COLLEGE OF DENTISTRY

AMOS S. WELLS, B.A., D.D.S., Professor of Crown and Bridge Work and Chairman of the Department of Crown and Bridge Work  
CHARLES A. WIETHOFF, D.D.S., Associate Professor of Oral Surgery  
M. RUSSEL WILCOX, M.D., Assistant Professor of Physiology  
GEORGE D. ALLEN, M.S., Ph.D., Instructor in Animal Biology  
ANNE BENTON, M.A., Instructor in Pathology and Bacteriology  
JOHN O. CEDERBERG, Jr., Instructor in Drawing and Descriptive Geometry  
ARCHIBALD B. BUTTER, D.D.S., Instructor in Operative Dentistry  
RUDOLPH W. DELTON, D.D.S., Instructor in Prosthetic Dentistry and Orthodontia  
GEORGE D. ESTES, D.D.S., Instructor in Operative Dentistry  
CHARLES C. GAULT, B.A., Instructor in Physiology  
ESTHER GREISHEIMER, B.S. in E., Ph.D., Instructor in Physiology  
LEE A. HARKER, D.D.S., Instructor in Prosthetic Dentistry and Oral Anatomy  
CLARENCE HERMANN, D.D.S., Instructor in Oral Hygiene  
RAYMOND R. HENRY, D.D.S., Instructor in Operative Dentistry  
HOUGHTON HOLLIDAY, B.A., D.D.S., Instructor in Theory and Practice, Superintendent of Infirmary, and Chairman of the Department of Theory and Practice  
RAYMOND E. JOHNSON, D.D.S., Instructor in Oral Hygiene  
EARL W. NELSON, D.D.S., Instructor in Oral Surgery  
GUSTAVE J. NOBACK, B.S., Instructor in Anatomy  
VICTOR T. NYLANDER, D.D.S., Instructor in Theory and Practice  
PAUL S. PARKER, D.D.S., Instructor in Operative Dentistry  
ADOLPH RINGOEN, Ph.D., Instructor in Animal Biology  
ROBERT F. SCHUCK, E.E., Instructor in Drawing and Descriptive Geometry  
CARL L. SCHUMAN, Ph.D., Instructor in Chemistry  
MARION R. STEVENS, B.A., D.D.S., Instructor in Operative Dentistry  
THEODORE H. SWEETSER, B.S., D.D.S., Instructor in Pathology  
LOUIS W. THOM, D.D.S., Instructor in Operative Dentistry  
REUBEN A. ULVESTAD, D.D.S., Instructor in Theory and Practice  
WILLIAM D. VEHE, D.D.S., Special Instructor in Porcelain Work  
PERCY WARD, B.S., M.D., Instructor in Pharmacology  
MARGARET WARWICK, B.S., M.D., Instructor in Pathology  
ANDREW J. WEISS, Instructor in Prosthetic Dentistry  
LEHMAN WENDELL, B.S., D.D.S., Instructor in Theory and Practice  
GUY H. WOOLLETT, Ph.D., Instructor in Chemistry  
DANIEL E. ZISKIN, D.D.S., Instructor in Oral Hygiene

## ASSISTANTS

EDITH L. DOUGHERTY, Assistant in Oral Hygiene  
HALBERT L. DUNN, B.A., Teaching Fellow in Anatomy  
ROBERT G. GREEN, B.A., Assistant in Bacteriology and Immunology  
HELEN A. MACKEEN, B.S., M.A., Teaching Fellow in Anatomy  
ALLEN T. NEWMAN, M.S., Assistant in Pharmacology  
T. PAUL QUIGLEY, B.S., M.D., Teaching Fellow in Pharmacology  
DAVID M. SIPERSTEIN, B.S., Teaching Fellow in Anatomy

## GENERAL INFORMATION

For statements of entrance requirements, registration, and fees, see the bulletins of general information and of extension work.

For schedule of lectures, announcements, changes in college rules, etc., see bulletin board. The rules for the guidance of students are printed in a separate booklet; in this will also be found a list of the required instruments.

## COURSES OFFERED

### FIVE-YEAR COURSE

A combined course of one year in the College of Science, Literature, and the Arts, and four years' work in the College of Dentistry, leading to the degree of Doctor of Dental Surgery.

### SIX-YEAR COURSE

A combined course of two years' work in the College of Science, Literature, and the Arts, and four years in the College of Dentistry, leading to the degrees of Bachelor of Science and Doctor of Dental Surgery.

### HYGIENISTS' COURSE

A course for Dental Hygienists, consisting of two years' work in Elliot Hospital and the College of Dentistry, requiring for admission graduation from an accredited high school, and leading to the degree of Graduate Dental Hygienist.

### GRADUATE WORK

Graduate work and opportunities for research are open in certain fields of Dentistry to properly qualified students.

The qualifications for admission to graduate work in this field are a baccalaureate degree from an acceptable college or university, and the dental degree from this or any other approved university. Such qualified students desiring graduate work will pursue courses of study in accordance with the regulations of the Graduate School. They may elect majors and minors for the graduate degree from the graduate courses in anatomy, embryology, histology, neurology, pathology, bacteriology, chemistry, physiology, and physiological chemistry. The material for investigation along dental lines in these various subjects is available from the dental clinic, the medical dispensary, the University Hospital, and the Mayo Clinic at Rochester, Minnesota, through the Mayo Foundation for Medical Education and Research. The Mayo Foundation offers a fellowship in dentistry similar to a fellowship in any other specialty on the foundation.

No special bulletin is issued for this work. The interested student will find the general conditions and the courses in the above fields set forth in the bulletin on graduate work in medicine.

### EXTENSION WORK

In order to enlarge its educational field and to fill a want that has found expression among practitioners, the College of Dentistry offers through the General Extension Division a series of courses in crown and bridge work, prosthetics, oral surgery, porcelain work, and orthodontia.

### MECHANICS COURSE

A course in Dental Mechanics is offered, under the auspices of the General Extension Division. This course extends over a period of one college year, requiring for admission completion of eighth-grade work and a minimum age of eighteen, except in cases of students having completed one or more years of high-school work. A certificate is awarded upon the satisfactory completion of the course.

### SUMMER SESSION

A summer session of six or eleven weeks is offered in the departments of Anatomy, Animal Biology, Bacteriology, Chemistry, Crown and Bridge Work, Oral Anatomy, Oral Surgery, Operative Dentistry, Orthodontia, Physiology, and Prosthetic Dentistry.

### REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Dental Surgery must be twenty-one years of age, of good moral character, and, after satisfying all the requirements for admission to the college, must have complied with all the rules and regulations of the college and obtained regular credit for all subjects of the entire course.

Graduates from accredited dental colleges applying for the degree of Doctor of Dental Surgery from the University of Minnesota must first satisfy all departmental requirements of the senior years in the College of Dentistry.

### REQUIREMENTS FOR ADMISSION

The College of Dentistry requires for admission the completion of one year of specified collegiate work in Science, Literature, and the Arts at the University of Minnesota or other college or university of equal rank.

The required academic studies preliminary to the dental course are: animal biology, 280 hours; chemistry, general, 192 hours; chemistry, qualitative, 88 hours; English, 175 hours; shop practice, 210 hours. High-school physics or its equivalent must be completed before entering the freshman year.

On account of the limited capacity of the College of Dentistry, not more than ninety freshmen can be admitted. Applications for admission should be in the registrar's office not later than July 15, 1920.

Candidates will be selected according to quantity and quality of preparation, and when necessary their fitness shall be determined by an examination and conference with the Committee on Entrance.

All other qualifications being equal, residents of Minnesota will be given prior consideration for vacancies existing at the date of their application.

#### FEES

The quarterly tuition fee in the College of Dentistry is sixty dollars (\$60.00), payable at the beginning of each quarter. (See bulletin of general information for detailed statement of expenses.)

## COURSE OF STUDY

	Quarter	Hours			Total
		1	2	3	
<b>FRESHMAN YEAR</b>					
Anatomy, Gross . . . . .	108	108	99		315
Anatomy, Oral . . . . .	..	..	66		66
Chemistry, Quantitative . . . . .	84	..	..		84
Chemistry, Organic . . . . .	..	108	99		207
Drawing . . . . .	72	72	..		144
Prosthesis . . . . .	72	72	66		210
					—
		336	360	330	1026
<b>SOPHOMORE YEAR</b>					
Anatomy, Histology and Embryology . . . . .	144	..	..		144
Anatomy, Oral . . . . .	72	72	..		144
Bacteriology, General . . . . .	..	99	..		99
Chemistry, Physiological . . . . .	..	72	..		72
Operative Dentistry Technique . . . . .	..	..	143		143
Orthodontia Technique . . . . .	..	..	99		99
Physiology . . . . .	..	..	121		121
Prosthesis . . . . .	144	108	..		252
					—
		360	351	363	1074
<b>JUNIOR YEAR</b>					
Bacteriology, Special . . . . .	66	..	..		66
Clinical Practice . . . . .	240	180	253		673
Crown and Bridge Technique . . . . .	108	108	..		216
Hygiene, General and Oral . . . . .	24	..	..		24
Metallurgy, Applied . . . . .	..	24	..		24
Operative Dentistry . . . . .	12	24	..		36
Pathology, General . . . . .	..	108	..		108
Pathology, Special . . . . .	..	..	99		99
Pathology, Oral . . . . .	..	24	..		24
Pharmacology and Therapeutics . . . . .	..	..	55		55
Prosthesis . . . . .	36	..	..		36
Surgery, Oral . . . . .	..	..	22		22
					—
		486	468	429	1383
<b>SENIOR YEAR</b>					
Clinical Medicine . . . . .	..	..	22		22
Clinical Practice . . . . .	396	396	363		1155
Crown and Bridge Work . . . . .	12	12	11		35
Operative Dentistry . . . . .	12	12	11		35
Orthodontia . . . . .	24	12	..		36
Surgery, Oral . . . . .	24	24	..		48
Theory and Practice . . . . .	..	12	22		34
					—
		468	468	429	1365

## DEPARTMENTAL STATEMENTS

### ANATOMY

Professors CLARENCE M. JACKSON, THOMAS G. LEE; Associate Professors CHARLES A. ERDMANN; Assistant Professor ANDREW T. RASMUSSEN; Teaching Fellows HALBERT L. DUNN, HELEN A. MACKEEN, DAVID M. SIPERSTEIN.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
9f-1ow	10	Systematic Anatomy.....	Fr.	An. Biol. 1-2
11s	5	Anatomy of Head and Neck .....	Fr.	An. Biol. 1-2, Anat. 9f-1ow
14w	8	Histology and Embryology	Soph.	An. Biol. 1-2; Anat. 9f-1ow-11s

9f-1ow. SYSTEMATIC ANATOMY. Lectures and recitations on the gross morphology of the various systems of the body. Laboratory work upon human and mammalian material. Special emphasis laid upon human osteology. 9 hours a week. JACKSON and Assistants.

11s. ANATOMY OF THE HEAD AND NECK. Dissection of the human head and neck, with lectures and recitations. 9 hours a week. ERDMANN and Assistants.

14w. HISTOLOGY AND EMBRYOLOGY. Minute structure and development of the tissues and organs of the body, with special emphasis upon the teeth and digestive tract. Lectures, recitations, and laboratory work. 13 hours a week. JACKSON, LEE, and Assistants.

#### ANATOMY—ORAL

Professor GEORGE M. DAMON; Assistant Professors OSCAR COOPerman, CARL H. PETRI, CHARLES E. RUDOLPH; Instructor LEE A. HARKER.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1s	3	Oral Anatomy .....	Fr., soph., hyg., mech.	Tech. Draw. 61-62, Pros. 1-2
2f	3	Oral Anatomy .....	Soph.	2

1s. ORAL ANATOMY. A course of lectures and recitations on the anatomy and nomenclature of the teeth, and such laboratory work as drawing, dissection, modeling, and carving of the teeth. 66 hours. DAMON, COOPerman, PETRI, RUDOLPH, HARKER.

2f-3w. ORAL ANATOMY. Continuation of Course 2 as outlined above. Special attention given to the physiological function of tooth form and its practical application. 144 hours. DAMON, COOPerman, PETRI, RUDOLPH, HARKER.

## COLLEGE OF DENTISTRY

## BACTERIOLOGY AND IMMUNOLOGY

Professor WINFORD P. LARSON; Assistant Professor ARTHUR T. HENRICI;  
Instructor ANNE BENTON; Assistant ROBERT G. GREEN.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1f	5	General Bacteriology....	Soph.	Chemistry; biology
102s	4	Special Dental Bacteriol.	Jr.	Bact. 1

1f,w,s,su. GENERAL BACTERIOLOGY. Preparation of culture media; morphology of bacteria; methods of staining and identification; anaerobic bacteria; principles of sterilization and disinfection; examination of air, water, milk; relations of bacteria to industries. 99 hours. 1f, special division for dental students. HENRICI and Assistants.

102s. SPECIAL BACTERIOLOGY. General consideration of the mouth flora; bacteriology of the stomatitides, dental caries, alveolar abscess and pyorrhea; systemic infections secondary to bacterial diseases of the mouth and teeth. 66 hours. HENRICI and Assistants.

## CHEMISTRY

Professors LAUDER W. JONES, CHARLES F. SIDENER; Associate Professors WILLIAM H. HUNTER; Assistant Professors ISAAC W. GEIGER; Instructor GUY H. WOOLLETT.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
20f	3	Quantitative Analysis...	Fr., soph.	11
31W-32s	4	Organic Chemistry.....	Soph.	20

20f. QUANTITATIVE ANALYSIS. Includes a general discussion of quantitative methods with laboratory work. 84 hours. SIDENER, GEIGER.

31W-32s. ELEMENTARY ORGANIC CHEMISTRY. This course will include a discussion of important compounds of the aliphatic and of the aromatic series, and the preparation of typical substances. 207 hours. HUNTER, WOOLLETT.

## CROWN AND BRIDGE WORK

Professors FORREST H. ORTON, AMOS S. WELLS; Associate Professors PETER J. BREKHUS, ALFRED A. PAGENKOPF, GEORGE W. REYNOLDS; Assistant Professors HERBERT C. NELSON, EVERETT E. MACGIBBON, CARL OTTO, WILLIAM A. ROLL; Instructor WILLIAM D. VEHE.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1f-2w	2	Crown and Bridge Tech- nique .....	Jr.	Dent. Anat. 3
3s	1	Crown and Bridge Practi- ce .....	Jr.	1f-2w

## DEPARTMENTAL STATEMENTS

13

No.	Credits	Title	Offered to	Prerequisite courses
4f-5w-6s	2	Crown and Bridge Practice .....	Sr.	1-2
7f,w,s		Crown and Bridge Technique .....	Mech.	None

1f-2w. CROWN AND BRIDGE TECHNIQUE. A course of lectures, demonstrations, and laboratory work that includes all the more important forms of crowns and bridges. 216 hours, and clinical practice. WELLS, PAGENKOPF, REYNOLDS, NELSON, MACGIBBON, OTTO.

3s. CROWN AND BRIDGE PRACTICE. A course of lectures, demonstrations, and clinical practice covering the simpler forms of crown and bridge work. 12 lecture hours and clinic. WELLS, PAGENKOPF, REYNOLDS, NELSON, MACGIBBON, OTTO.

4f-5w-6s. CROWN AND BRIDGE PRACTICE. A course of lectures and clinical practice covering the entire field of crown and bridge work, including porcelain crown work. 32 lecture hours and clinical practice. ORTON, BREKHUS, ROLL, VEHE.

7f,w,s. A course covering the laboratory technique and its practical application in the infirmary. WELLS, RUDOLPH, WEISS.

## DRAWING AND DESCRIPTIVE GEOMETRY

Professor WILLIAM H. KIRCHNER; Instructors JOHN O. CEDERBERG, ROBERT F. SCHUCK.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
61-62f,w,s	4	Technical Drawing .....	All	None

61-62f,w,s. TECHNICAL DRAWING. Reading and making of drawings. Projection, sketching, lettering, conventions, renderings, and translations. Preparation of conventional charts and diagrams of particular interest to dentists; also construction drawings of tools, instruments, and apparatus. 144 laboratory hours. KIRCHNER, CEDERBERG, SCHUCK.

## HYGIENE AND PATHOLOGY, ORAL

Assistant Professors HAROLD J. LEONARD, WILLIAM A. GREY; Instructors CLARENCE A. HERMANN, RAYMOND E. JOHNSON, DANIEL E. ZISKIN; Assistant EDITH L. DOUGHERTY.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1f	2	Oral Hygiene .....	Jr., dent. hyg.	None
2w	2	Oral Pathology .....	Jr., dent. hyg.	Path. and bact.
3s	2	Clinical Medicine .....	Sr., dent. hyg.	Oral path.
4f-5w-6s	2	Clinical Practice .....	Jr., sr.	
7f-8w-9s	13	Clinical Practice .....	Dent. hyg.	
10f-11w-12s	13	Hospital Practice .....	Sr., grad.	
13f-14w-15s	1	Hosp. Dent. Nurse Work	Dent. hyg.	

- 1f. ORAL HYGIENE. A course of lectures and recitations on general and oral hygiene including such general and special material as a prospective health officer as well as dentist or dental hygienist should have and emphasizing particularly prevention of disease and positive health. 24 lecture hours. LEONARD.
- 2w. ORAL PATHOLOGY. Lectures and recitations in which general pathology is used as a basis for the special pathology of the teeth and other oral tissues, and in which causes are sought as a basis for reasonable therapeutics. Offered to junior dental students and senior dental hygienists. 24 lecture hours. LEONARD.
- 3s. CLINICAL MEDICINE. Lectures and recitations dealing with the subject of systemic disease with special emphasis on the relationship or non-relationship between the systemic diseases and focal infection or irritation in the mouth and elsewhere. Offered to seniors, graduates, and dental hygienists. 24 lecture hours. LEONARD and Associates.
- 4f-5w-6s. CLINICAL PRACTICE. Work in dental infirmary, University Hospital, and University Dispensary in oral hygiene, prophylaxis, treatment of pyorrhea. Emphasis on systemic relationship in oral disease and its treatment. Sufficient work to demonstrate proficiency; usually about 24 clinical periods. LEONARD, GREY, HERMANN, JOHNSON, ZISKIN.
- 7f-8w-9s. CLINICAL PRACTICE. Similar to the foregoing except in being more detailed in technique and with special attention to prophylaxis work with children. Offered to senior dental hygienists. 136 clinical periods. LEONARD, GREY, DOUGHERTY, HERMANN, JOHNSON, ZISKIN.
- 10f-11w-12s. HOSPITAL PRACTICE. Practical hospital dentistry in the University hospitals, taught with the help of the clinical medical staffs, three half-days a week throughout a year. Open to graduate dentists and to qualified seniors. LEONARD, GREY, DOUGHERTY, HERMANN, ZISKIN.
- 13f-14w-15s. HOSPITAL DENTAL NURSE WORK. A course in practical assisting and hospital oral hygiene routine for freshman dental hygienist students. 1 clinical period per week for five months. DOUGHERTY.

#### METALLURGY—APPLIED

Professor ALFRED OWRE; Associate Professor HARRY C. LAWTON.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
IW	1	Dental Metallurgy .....	Jr.	Chem. 21-22

- IW. DENTAL METALLURGY. Lectures, recitations, and demonstrations, taking up the most important metals with special reference to those used in dentistry. 24 hours. OWRE, LAWTON.

## OPERATIVE DENTISTRY

Professors JAMES M. WALLS, HENRY S. GODFREY; Associate Professors ROBERT O. GREEN, MARK O. PATTRIDGE, JOSEPH F. SHELLMAN; Assistant Professors NORMAN J. COX, JOSEPH M. LITTLE, RICHARD S. MAYBURY, WILLIAM C. NAEGELI; Instructors ARCHIBALD B. BUTTER, GEORGE D. ESTES, RAYMOND R. HENRY, VICTOR T. NYLANDER, PAUL S. PARKER, MARION B. STEVENS, LOUIS W. THOM, WILLIAM D. VEHE.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3s	2	Operative Technique....	Soph.	Dent. Anat. 3
4f-5w-6s	2	Operative Practice ....	Jr.	2
7f-8w-9s	3	Operative Practice.....	Sr.	3+4
1of,w,s		Operative Technique....	Mech.	.....

3s. OPERATIVE TECHNIQUE. This course consists of lectures, recitations, demonstrations, and laboratory work of a technical nature. 143 hours. GREEN, BUTTER, ESTES, HENRY, NYLANDER, THOM.

4f-5w-6s. OPERATIVE PRACTICE. This course consists of lectures, recitations, and clinical practice. 32 lecture hours and clinical practice. WALLS, GREEN, PATTRIDGE, SHELLMAN, LITTLE, MAYBURY, NAEGELI, NYLANDER, PARKER.

7f-8w-9s. OPERATIVE PRACTICE. A course of lectures, recitations, demonstrations, conference work, collateral reading, and clinical work covering the entire field of operative dentistry, including children's clinic, and porcelain operations. 35 lecture hours and clinical practice. WALLS, GODFREY, PATTRIDGE, SHELLMAN, COX, LITTLE, MAYBURY, NAEGELI, STEVENS, VEHE.

1of,w,s. OPERATIVE TECHNIQUE. A course of lectures and laboratory work and the practical application in the dental infirmary. WALLS, RUDOLPH, WEISS.

## ORTHODONTIA

Professor OSCAR A. WEISS, WILLIAM F. LASBY; Associate Professors MAX E. ERNST, HARRY C. LAWTON; Assistant Professors CARL O. FLAGSTAD; Instructors RUDOLPH W. DELTON, LEHMAN WENDELL.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3s	2	Orthodontia Technique..	Jr., hyg.	Pros. Tech. 4
4f-5w-6s	4	Orthodontia Practice....	Sr.	1
7f,w,s		Orthodontia Technique..	Mech.	None

3s. ORTHODONTIA TECHNIQUE. A course of lectures, recitations, and laboratory work in the making of regulating appliances. 99 hours. LAWTON, DELTON, WENDELL.

4f-5w-6s. ORTHODONTIA PRACTICE. A course of lectures and recitations upon theory and practice and clinical work. Every student is required to treat at least one case of irregularity of the teeth. 32 lecture hours, and clinical practice. WEISS, LASBY, ERNST, FLAGSTAD.

7f,w,s. ORTHODONTIA TECHNIQUE. A course of lectures and laboratory work covering the technique and its practical application. LAWTON, RUDOLPH, WEISS.

### PATHOLOGY AND PUBLIC HEALTH

Professor HAROLD E. ROBERTSON; Instructor MARGARET WARWICK.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
4f	6	General Pathology .....	Jr.	Gross anat., histol.
5w	6	Special Pathology .....	Jr.	General path.

4f. GENERAL PATHOLOGY. The principles of general pathology including circulatory disturbances, metabolic changes in cells and tissues, pigment deposits, inflammations and tumors. Lesions illustrated by gross and microscopic specimens. General and special bacteriology. 108 hours. ROBERTSON, WARWICK, and Assistants.

5w. SPECIAL PATHOLOGY. Study of the pathology of selected diseases, tumors, and lesions with special reference to those affecting the mouth and dental structures. Exercises in gross and microscopic diagnosis. 99 hours. ROBERTSON, WARWICK, and Assistants.

### PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor EDGAR D. BROWN; Instructor PERCY WARD; Assistant ALLEN T. NEWMAN; Teaching Fellow J. PAUL QUIGLEY.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
4s	4	Pharmacology .....	Jr.	.....
6s		Experimental Pharmacol.	Jr.	.....

4s. PHARMACOLOGY. The history, origin, nature, pharmacal preparations, and uses of drugs, including the discussion of their physiologic, pharmacologic, and therapeutic actions. 44 hours. HIRSCHFELDER.

6s. EXPERIMENTAL PHARMACOLOGY. Laboratory exercises upon the chemical composition and mode of action of typical drugs upon man and animals, primarily for students in dentistry. One exercise (2 hours) per week. HIRSCHFELDER, BROWN, NEWMAN.

### PHYSIOLOGY

Professors ELIAS P. LYON, FREDERICK H. SCOTT; Associate Professors RICHARD O. BEARD, JESSE F. MC CLENDON; Assistant Professors

FRANCIS B. KINGSBURY, CHAUNCEY J. V. PETTIBONE, M. RUSSEL WILCOX; Instructor ESTHER GREISHEIMER; Assistant CHARLES C. GAULT.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
7s	7	Physiology .....	Soph. .	Organic chemistry

7s. HUMAN PHYSIOLOGY. Prerequisite, organic chemistry, human anatomy. 121 hours.

#### PROSTHETIC DENTISTRY

Professors OSCAR A. WEISS, GEORGE M. DAMON, WILLIAM F. LASBY; Associate Professor HARRY C. LAWTON; Assistant Professors OSCAR COOPERMAN, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH; Instructors RUDOLPH W. DELTON, LEE A. HARKER, ANDREW J. WEISS, LEHMAN WENDELL.

#### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1f-2w-3s	2	Prosthetic Technique....	Fr.	None
4f-5w	2	Prosthetic Technique....	Soph.	1-2
7f-8w-9s	2	Prosthetic Practice .....	Jr.	3-4
1of-1Iw-12s	1	Prosthetic Practice.....	Sr.	5-6
13w		Prosthetic Technique....	Hyg., mech.	None

1f-2w-3s. PROSTHETIC TECHNIQUE. A course of lectures and technique work in the laboratory, comprising impression materials and their uses and the different processes of plate work. 210 hours. DAMON, COOPERMAN, PETRI, RUDOLPH, HARKER.

4f-5w. PROSTHETIC TECHNIQUE. A course of lectures, recitations, and laboratory work covering the principles and practice of metallic plate work. 252 hours. LAWTON, DELTON, WENDELL.

7f-8w-9s. PROSTHETIC PRACTICE. A course of lectures and recitations upon theory and practice and clinical work in the simpler forms. 36 lecture hours and clinical practice. WEISS, LASBY, LAWTON, FLAGSTAD, RUDOLPH.

1of-1Iw-12s. PROSTHETIC PRACTICE. A course of clinical work in special prosthesis, as cleft palate and facial restoration. Clinical practice. WEISS, LASBY, LAWTON, FLAGSTAD, RUDOLPH.

13f,w,s. PROSTHETIC TECHNIQUE. A course of lectures, recitations, and laboratory technique covering equipment and arrangement of the dental laboratory, impression materials, study models, vulcanite and metallic dentures. 10 hours per week. DAMON, RUDOLPH, WEISS.

#### SURGERY—ORAL

Professors CHARLES A. GRIFFITH, HERMAN A. MAVES; Associate Professors RAY R. KNIGHT, CHARLES WIETHOFF; Assistant Professors

## COLLEGE OF DENTISTRY

BERT G. ANDERSON, WILLIAM McDougall; Instructors EARL W. NELSON, HOUGHTON HOLLIDAY.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1s	2	Oral Surgery .....	Jr.	None
2f-3w	1	Oral Surgery .....	Sr.	1s
4f-5w	1	Principles of Surgery...	Sr.	1s
6f	1	Anesthesia (N <sub>2</sub> O).....	Sr., hyg.	None

1s. ORAL SURGERY. A course of lectures, demonstrations, and recitations on conductive anesthesia and the technique of extraction. 22 hours. GRIFFITH, MAVES, and Assistants.

2f-3w. ORAL SURGERY. An advanced course in conductive anesthesia, the technique of extraction. 60 hours in applied dental surgery. GRIFFITH, MAVES, and Assistants.

4f-5w. PRINCIPLES OF SURGERY. Lecture course dealing with development of antisepsis and asepsis, local and general anesthesia, operating-room and its accessories, sterilization, instruments, pre-operative and post-operative care of patient. Principles in general surgery, oral operations, facial sinuses, legal liability. KNIGHT.

6f. NITROUS OXIDE ANESTHESIA. Practice in administering the anesthetic and assisting in dental operations. 48 hours. HOLLIDAY.

## THEORY AND PRACTICE OF DENTISTRY

Professor ALFRED OWRE; Associate Professor RAY R. KNIGHT; Instructors HOUGHTON HOLLIDAY, VICTOR T. NYLANDER, REUBEN A. ULVESTAD.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1f-2w-3s	..	Dental Roentgenology..	Jr., hyg.	Elem. physics
4w-5s	..	Theory and Practice of Dentistry .....	Sr., hyg.	None
6f-7w-8s	..	Diagnosis .....	Sr.	None

1f-2w-3s. DENTAL ROENTGENOLOGY. Lectures, demonstrations, and quizzes in electro-physics, coils and transformers, current supply, voltage amperage, types of tubes and controls, photographic materials, developing, placing, and exposing films, reading negatives, protection of patient and operator, legal liability. KNIGHT.

4w-5s. THEORY AND PRACTICE OF DENTISTRY. A lecture and conference course in the theory and practice of dentistry, applied economics, jurisprudence, psychology, ethics, and art. 32 lecture hours. OWRE and Associates.

6f-7w-8s. DIAGNOSIS. The personal and direct study of patients entering the clinic to determine the condition of their teeth and surrounding tissues and advise remedial measures. HOLLIDAY, NYLANDER, ULVESTAD.

### OUTSIDE READING

To emphasize the value of general reading to the dentist it has been decided to offer credit for additional reading done in connection with professional courses. One credit will be given for each group completed; lists may be obtained at the dean's office.

It is hardly possible to overestimate the value of general reading as an aid to the student in his adjustment to life. It affords, moreover, a life-long source of enjoyment and an unfailing refuge from vexatious daily cares. Students are urged to begin their reading early and to complete as many groups as possible. The work may, of course, be done in the summer. When a list is completed, a statement should be handed to the dean's office. General questions may be asked concerning the subject-matter of the books read, and their value to the reader.



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# The Bulletin of the University of Minnesota

*The College of Dentistry  
Announcement for the Year  
1921-1922*



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1921							1922						
JULY							JANUARY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
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SEPTEMBER							MARCH						
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DECEMBER							JUNE						
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# UNIVERSITY CALENDAR

1921-1922

**1921**

September	17	Saturday	Payment of fees closes, except for new students
September	20-27	Week	Examinations for removal of conditions and entrance examinations
			Registration period, Colleges of Science, Literature, and the Arts, and Agriculture, Forestry, and Home Economics
			Physical examinations for all new students
September	26-27		Registration days for all colleges not indicated above
September	27	Tuesday	Payment of fees for new students closes
September	28	Wednesday	Fall quarter begins, 8:30 a.m.
October	15	Saturday	Class Scrap Day; all classes to be dismissed for the fourth hour
October	20	Thursday	Senate meeting, 4:30 p.m.
November	5	Saturday	Home Coming Day; classes to be dismissed for the third and fourth hours
November	11	Friday	Armistice Day; a holiday
November	24	Thursday	Thanksgiving Day; a holiday
December	15	Thursday	Senate meeting, 4:30 p.m.
December	21	Wednesday	Fall quarter ends, Christmas vacation begins, 5:20 p.m.

**1922**

January	4	Wednesday	Christmas vacation ends, winter quarter begins, 8:30 a.m.
February	16	Thursday	Senate meeting, 4:30 p.m.
February	22	Wednesday	Washington's Birthday; a holiday
March	23	Thursday	Winter quarter ends, spring vacation begins, 5:20 p.m.
March	29	Wednesday	Spring vacation ends, spring quarter begins, 8:30 a.m.
May	18	Thursday	Senate meeting, 4:30 p.m.
May	30	Tuesday	Memorial Day; a holiday
June	11	Sunday	Baccalaureate service
June	13	Tuesday	Spring quarter closes, 5:20 p.m.
June	14	Wednesday	Fiftieth annual commencement
June	17-19		Registration days for summer session
June	20	Tuesday	Summer session begins
July	28	Friday	Summer session closes

# THE COLLEGE OF DENTISTRY

## FACULTY

LOTUS DELTA COFFMAN, Ph.D., President

WILLIAM WATTS FOLWELL, LL.D., President Emeritus

CYRUS NORTHROP, LL.D., President Emeritus

ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean of College of Dentistry.

Professor of the Practice of Dentistry, and Chairman of the Department of Dentistry

BERT G. ANDERSON, D.D.S., Assistant Professor of Oral Surgery and Chairman of the Division of Oral Diagnosis

MOSES BARRON, B.S., M.D., Assistant Professor of Pathology

RICHARD O. BEARD, M.D., Associate Professor of Physiology

ELEXIOUS T. BELL, B.S., M.D., Professor of Pathology

PETER J. BREKHSUS, B.A., D.D.S., Associate Professor of Crown and Bridge Work

EDGAR D. BROWN, Ph.D., M.D., Associate Professor of Pharmacology

OSCAR COOPerman, D.D.S., Assistant Professor of Prosthetic Dentistry and Oral Anatomy

NORMAN J. COX, B.S., D.M.D., Assistant Professor of Operative Dentistry

GEORGE M. DAMON, D.D.S., Professor of Prosthetic Dentistry and Oral Anatomy and Chairman of the Division of Oral Anatomy

MAX E. ERNST, LL.B., D.D.S., Associate Professor of Orthodontia

CARL O. FLAGSTAD, D.D.S., Assistant Professor of Prosthetic Dentistry and Orthodontia

ISAAC W. GEIGER, Ph.D., Assistant Professor of Chemistry

HENRY S. GODFREY, D.M.D., Professor of Operative Dentistry

ROBERT O. GREEN, D.D.S., Associate Professor of Operative Dentistry

WILLIAM A. GREY, D.D.S., Assistant Professor of Oral Surgery and Chairman of the Group in Hospital Dentistry

CHARLES A. GRIFFITH, D.D.S., Professor of Oral Surgery and Chairman of the Division of Oral Surgery

OSCAR E. HARDER, Ph.D., Associate Professor of Metallography

LEE A. HARKER, D.D.S., Assistant Professor of Oral Anatomy

ARTHUR T. HENRICI, M.D., Associate Professor of Bacteriology

ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology

WILLIAM H. HUNTER, Ph.D., Professor of Chemistry

CLARENCE M. JACKSON, M.S., M.D., Professor of Anatomy

CONRAD JACOBSON, M.D., Associate Professor of Surgery

FRANCIS B. KINGSBURY, Ph.D., Assistant Professor of Physiologic Chemistry

RAY R. KNIGHT, B.A., M.D., Associate Professor of Roentgenology

WINFORD P. LARSON, M.D., Professor of Bacteriology and Immunology

- WILLIAM F. LASBY, B.A., D.D.S., Professor of Prosthetic Dentistry and Orthodontia and Chairman of the Division of Prosthetic Dentistry  
HARRY C. LAWTON, D.D.S., Associate Professor of Prosthetic Dentistry and Orthodontia  
THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy  
HAROLD J. LEONARD, B.A., D.D.S., Assistant Professor of Oral Hygiene and Pathology, Superintendent of the School for Dental Hygienists and Chairman of the Division of Periodontia and Oral Hygiene  
JOSEPH M. LITTLE, D.D.S., Assistant Professor of Operative Dentistry  
ELIAS P. LYON, Ph.D., M.D., Professor of Physiology  
JESSE F. McCLENDON, Ph.D., Professor of Physiology  
WILLIAM McDougall, D.D.S., Assistant Professor of Oral Surgery  
EVERETT E. MACGIBBON, D.D.S., Assistant Professor of Crown and Bridge Work  
HERMAN A. MAVES, D.D.S., Professor of Oral Surgery  
RICHARD S. MAYBURY, D.D.S., Associate Professor of Operative Dentistry  
WILLIAM C. NAEGLI, D.D.S., Assistant Professor of Operative Dentistry  
HERBERT C. NELSON, D.D.S., Assistant Professor of Crown and Bridge Work  
FORREST H. ORTON, D.D.S., Professor of Crown and Bridge Work  
CARL OTTO, D.D.S., Assistant Professor of Crown and Bridge Work  
ALFRED A. PAGENKOPF, D.D.S., Associate Professor of Crown and Bridge Work and Chairman of the Division of Crown and Bridge Work  
PAUL S. PARKER, D.D.S., Assistant Professor of Operative Dentistry  
CARL H. PETRI, D.D.S., Assistant Professor of Prosthetic Dentistry and Oral Anatomy  
CHAUNCEY J. V. PETTIBONE, Ph.D., Associate Professor of Physiologic Chemistry  
ANDREW T. RASMUSSEN, Ph.D., Associate Professor of Neurology  
GEORGE W. REYNOLDS, D.D.S., Associate Professor of Crown and Bridge Work  
WILLIAM A. ROLL, D.D.S., Assistant Professor of Crown and Bridge Work  
CHARLES E. RUDOLPH, D.D.S., Assistant Professor of Prosthetic Dentistry and Oral Anatomy, Superintendent of the Course for Dental Mechanics  
HENRY H. RUTHERFORD, B.A., M.D., Professor of Military Science and Tactics  
RICHARD E. SCAMMON, Ph.D., Professor of Anatomy  
FREDERICK H. SCOTT, M.B., Ph.D., D.Sc., Professor of Physiology  
JOSEPH F. SHELLMAN, D.D.S., Associate Professor of Operative Dentistry  
CHARLES F. SIDENER, B.S., Professor of Chemistry  
ARTHUR C. STRACHAUER, M.D., F.A.C.S., Professor of Surgery  
JOHN SUNDWALL, M.D., Professor of Hygiene and University Health Officer  
JAMES M. WALLS, D.M.D., Professor of Operative Dentistry and Chairman of the Division of Operative Dentistry  
MARGARET WARWICK, B.S., M.D., Assistant Professor of Pathology

- OSCAR A. WEISS, D.M.D., Professor of Prosthetic Dentistry and Orthodontia, Chairman of the Division of Orthodontia  
AMOS S. WELLS, B.A., D.D.S., Professor of Crown and Bridge Work  
CHARLES A. WIETHOFF, D.D.S., Associate Professor of Oral Surgery  
M. RUSSEL WILCOX, M.D., Assistant Professor of Physiology  
HILDING C. ANDERSON, B.S., M.D., Instructor in Pathology  
ANNE BENTON, M.A., Instructor in Pathology and Bacteriology  
ARCHIBALD B. BUTTER, D.D.S., Instructor in Operative Dentistry  
RUDOLPH W. DELTON, D.D.S., Instructor in Prosthetic Dentistry and Orthodontia  
RALPH L. DOWDELL, Met.E., Instructor in Metallurgy  
LAWRENCE M. DURFEE, D.D.S., Instructor in Operative Dentistry  
GEORGE D. ESTES, D.D.S., Instructor in Operative Dentistry  
JAY M. FREEBURG, D.D.S., Instructor in Operative Dentistry  
CHARLES C. GAULT, B.A., Instructor in Physiology  
ESTHER GREISHEIMER, B.S., in E., Ph.D., Instructor in Physiology  
RAYMOND R. HENRY, D.D.S., Instructor in Operative Dentistry  
CLARENCE HERMANN, D.D.S., Instructor in Oral Surgery  
HOUGHTON HOLLIDAY, B.A., D.D.S., Instructor in Oral Diagnosis and Oral Surgery, Superintendent of Infirmary  
ROY M. JERNALL, D.D.S., Instructor in Prosthetic Dentistry  
RAYMOND E. JOHNSON, D.D.S., Instructor in Periodontia  
JAMES S. McCARTNEY, B.A., M.D., Instructor in Pathology  
GEORGE A. MONTELUS, D.D.S., Instructor in Oral Diagnosis  
EARL W. NELSON, D.D.S., Instructor in Oral Surgery  
GUSTAVE J. NOBACK, B.S., Instructor in Anatomy  
CARL A. OMAN, D.D.S., Instructor in Oral Surgery  
PAUL S. PARKER, D.D.S., Instructor in Operative Dentistry  
LYNN RADKE, D.D.S., Instructor in Periodontia  
HENRY N. REINKING, D.D.S., Instructor in Oral Surgery  
LANDON A. SARVER, M.A., Instructor in Chemistry  
LEE I. SMITH, Ph.D., Instructor in Chemistry  
DAVID O. SPRIESTERSBACH, M.S., Instructor in Bacteriology  
MARION R. STEVENS, B.A., D.D.S., Instructor in Operative Dentistry  
CARL A. SWANSON, D.D.S., Instructor in Oral Surgery  
THEODORE H. SWEETSER, B.S., M.D., Instructor in Pathology  
FRED C. THIERS, D.D.S., Instructor in Operative Dentistry  
LOUIS W. THOM, D.D.S., Instructor in Operative Dentistry  
RUEBEN A. ULVESTAD, D.D.S., Instructor in Prosthetic Dentistry  
INGVALD VEBLEN, D.D.S., Instructor in Periodontia  
WILLIAM D. VEHE, D.D.S., Special Instructor in Porcelain Work  
PERCY A. WARD, B.S., M.D., Instructor in Pharmacology  
ANDREW J. WEISS, Instructor in Prosthetic Dentistry  
LEHMAN WENDELL, B.S., D.D.S., Instructor in Orthodontia  
DANIEL E. ZISKIN, D.D.S., Instructor in Oral Surgery

*FACULTY*

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*ASSISTANTS*

- DONALD W. DE CARLE, B.S., Teaching Fellow in Pathology  
LEONARD V. DOWNING, D.D.S., Teaching Assistant in Prosthetics  
ROBERT C. GREEN, B.A., Assistant in Bacteriology  
RUTH HERRICK, B.S., Teaching Fellow in Anatomy  
HERMAN JENSEN, B.A., B.S., Teaching Fellow in Pharmacology  
ARTHUR F. JOHNSON, D.D.S., Teaching Assistant in Prosthetics  
LEROY M. MAEDER, B.S., Assistant in Anatomy  
SHIRLEY P. MILLER, B.S., M.A., Teaching Fellow in Anatomy  
ALLEN T. NEWMAN, M.Sc., Assistant in Pharmacology  
JOHN F. SPRAFKA, D.D.S., Teaching Assistant in Operative Dentistry  
ELWYN H. WELCH, B.A., Teaching Fellow in Anatomy

## GENERAL INFORMATION

For statements of entrance requirements and registration, see the bulletins of general information and of extension work.

For schedule of lectures, announcements, changes in college rules, etc., see bulletin board. The rules for the guidance of students are printed in a separate booklet; in this will also be found a list of the required instruments.

### COURSES OFFERED

#### FIVE-YEAR COURSE

A combined course of one year in the College of Science, Literature, and the Arts, and four years' work in the College of Dentistry, leading to the degree of Doctor of Dental Surgery.

#### SEVEN-YEAR COURSE

Seven-year course in Arts and Dentistry leading to the degrees of Bachelor of Arts and Doctor of Dental Surgery. The first three years' work in the College of Science, Literature, and the Arts under the regular rules, secures 135 credits. The final year in the College of Dentistry counts as equivalent to the fourth year (forty-five credits). The remaining three years are taken in the College of Dentistry.

### GRADUATE WORK

Graduate work and opportunities for research are open in certain fields of dentistry to properly qualified students.

The qualifications for admission to graduate work in this field are a baccalaureate degree from an acceptable college or university, and the dental degree from this or any other approved university. Such qualified students desiring graduate work will pursue courses of study in accordance with the regulations of the Graduate School. They may elect majors and minors for the graduate degree from the graduate courses in anatomy, embryology, histology, neurology, pathology, bacteriology, chemistry, physiology, and physiologic chemistry. The material for investigation along dental lines in these various subjects is available from the dental clinic, the medical dispensary, the University Hospital, and the Mayo Clinic at Rochester, Minnesota, through the Mayo Foundation for Medical Education and Research. The Mayo Foundation offers several fellowships in dentistry similar to fellowships in other specialties on the foundation.

No special bulletin is issued for this work. The interested student will find the general conditions and the courses in the above fields set forth in the bulletin on graduate work in medicine.

### HYGIENISTS' COURSE

A course for Dental Hygienists, consisting of two years' work in Elliot Hospital and the College of Dentistry, requiring for admission graduation from an accredited high school, and leading to the degree of Graduate Dental Hygienist.

### EXTENSION WORK

In order to enlarge its educational field and to fill a want that has found expression among practitioners, the College of Dentistry offers through the General Extension Division a series of courses in crown and bridge work, prosthetics, oral surgery, porcelain work, and orthodontia. For detailed information see bulletin of extension work.

### MECHANICS COURSE

A course in Dental Mechanics is offered, under the auspices of the General Extension Division. This course extends over a period of one college year, requiring for admission completion of eighth-grade work and a minimum age of eighteen, except in cases of students having completed one or more years of high-school work. A certificate is awarded upon the satisfactory completion of the course. For detailed information see bulletin of extension work.

### SUMMER SESSION

A summer session of six or eleven weeks is offered in the departments of Anatomy, Bacteriology, Chemistry, Dentistry, Pathology, and Physiology.

### REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Dental Surgery must be twenty-one years of age, of good moral character, and, after satisfying all the requirements for admission to the college, must have complied with all the rules and regulations of the college and obtained regular credit for all subjects of the entire course.

Graduates from accredited dental colleges applying for the degree of Doctor of Dental Surgery from the University of Minnesota must fulfill all entrance and departmental requirements and spend at least one year in residence.

### REQUIREMENTS FOR ADMISSION

The College of Dentistry requires for admission the completion of one year of specified collegiate work in Science, Literature, and the Arts at the University of Minnesota or other college or university of equal rank.

The required academic studies preliminary to the dental course are: animal biology, 280 hours; chemistry, general, 192 hours; chemistry, qualitative, 88 hours; English, 175 hours; technical drawing or shop practice, 210 hours. High-school physics or its equivalent must be completed before entering the freshman year.

On account of the limited capacity of the College of Dentistry, not more than ninety freshmen can be admitted. Applications for admission should be in the registrar's office not later than July 15, 1921.

Candidates will be selected according to quantity and quality of preparation, and when necessary their fitness shall be determined by an examination and conference with the Committee on Entrance.

## FEES

## Tuition fee (per quarter):

Residents of Minnesota.....	\$60.00
Non-residents .....	70.00
Deposit (first quarter only).....	5.00
Military deposit (required of all students taking Military Drill).....	10.00
Health fee.....	2.00
Minnesota Union or Shevelin Hall (per quarter).....	1.00
Post-office box (per quarter).....	.20
Special fees:	
Examination for removal of conditions.....	1.00
Examinations for credit (after six weeks in residence).....	5.00
Special examinations.....	5.00
Chemistry deposit.....	5.00

## PENALTY FEES:

*Registration penalties.*—A penalty fee for late registration, late change of registration, or late payment of fees shall be two dollars (\$2.00) and one dollar (\$1.00) additional for each day of delay after classes begin, provided that no student shall pay more than twelve dollars (\$12.00) of penalty in any given quarter.

## COURSE OF STUDY

FRESHMAN YEAR	First	Second	Third	Total
	Quarter	Quarter	Quarter	
✓ Anatomy, Gross .....	108	108	99	315
✓ Anatomy, Oral .....	84	84	77	245
✓ Chemistry, Organic.....	108	108	..	216
✓ Chemistry, Quantitative .....	..	..	99	99
✓ Prosthetic Technic .....	84	84	77	245

## SOPHOMORE YEAR

✓ Anatomy, Histology, and Embryology.....	144	..	..	144
✓ Anatomy, Oral .....	36	108	..	144
✓ Bacteriology, General .....	..	108	..	108
✓ Chemistry, Organic .....	108	..	..	108
✓ Chemistry, Physiologic .....	..	..	99	99
✓ Crown & Bridge Technic, beginning 1922-23)	72	72	66	210
✓ Operative Dentistry Technic.....	..	..	143	143
✓ Orthodontia Technic .....	..	..	110	110
✓ Physiology .....	..	72	66	138
✓ Prosthetic Technic .....	108	108	..	216

## JUNIOR YEAR

✓ \$ Bacteriology, General .....	108	..	..	108
✓ \$ Bacteriology, Special .....	48	..	..	48
✓    Clinical Practice .....	180	180	253	613
✓    Crown and Bridge Technic.....	108	108	..	216
✓ Hygiene, General Oral, Lect. and Rec.....	24	..	..	24
✓ Metallurgy, Applied .....	..	36	..	36
✓ Operative Dentistry, Lect. and Rec.....	12	12	11	35
✓ **Orthodontia Technic .....	..	..	88	88
✓ Pathology, General .....	..	108	..	108
✓ Pathology, Oral, Lect. and Rec.....	..	..	33	33
✓ Pathology, Special, beginning 1922-23).....	..	..	99	99
✓ Pharmacology and Therapeutics.....	..	..	55	55
✓ Prosthesis, Lect. and Rec.....	12	12	11	35
✓ Surgery, Oral, Lect. and Rec.....	..	24	..	24

## SENIOR YEAR

✓ Clinical Medicine, Lect. and Rec.....	..	..	22	22
✓ Clinical Practice .....	396	396	363	1,155
✓ Crown and Bridge Work, Lect. and Rec.....	12	12	11	35
✓ Diagnosis, General and Oral, Lect. and Rec... .	12	..	..	12
✓ Operative Dentistry, Lect. and Rec.....	12	12	11	35
✓ Orthodontia, Lect. and Rec.....	12	12	11	35
✓ Surgery, Oral, Lect. and Rec.....	22	36	..	72
✓ Surgery Principles, Lect. and Rec.....	22	..	..	..
✓ Thesis and Seminar.....	..	12	22	34

✓ \* Oral Anatomy and Organic Chemistry will not be offered as sophomore subjects after 1921-22.

✓ † Operative Technic will be increased to 210 hours in 1922-23, and made a three-quarter subject.

✓ ‡ General Bacteriology will not be offered as a junior subject after 1921-22.

✓ § Special Bacteriology will be offered to juniors in 1922-23, and in 1923-24 will be increased to 66 hours.

✓ || Clinical Practice for juniors will be increased to 673 hours in 1922-23, and to 843 hours in 1923-24.

✓ || Crown and Bridge Technic will not be offered as a junior subject after 1922-23.

✓ \*\* Orthodontia Technic will not be offered as a junior subject after 1921-22.

## DEPARTMENTAL STATEMENTS ANATOMY

Professors CLARENCE M. JACKSON, THOMAS G. LEE; Associate Professor ANDREW T. RASMUSSEN; Teaching Fellows RUTH HERRICK, SHIRLEY P. MILLER, ELWYN H. WELCH; Assistant LEROY M. MAEDER.

### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
gf-1ow	10	Systematic Anatomy.....	Fr.	An. Biol. 1-2
iis	5	Anatomy of Head and Neck .....	Fr.	An. Biol. 1-2, Anat. gf-1ow
14f	8	Histology and Embryology .....	Soph.	An. Biol. 1-2, Anat. gf-1ow-iis

gf-1ow. SYSTEMATIC ANATOMY. Lectures and recitations on the gross morphology of the various systems of the body. Laboratory work upon human and mammalian material. Special emphasis laid upon human osteology. 9 hours a week. DR. JACKSON and Assistants.

iis. ANATOMY OF THE HEAD AND NECK. Dissection of the human head and neck, with lectures and recitations. 9 hours a week. MR. RASMUSSEN and Assistants.

14f. HISTOLOGY AND EMBRYOLOGY. Minute structure and development of the tissues and organs of the body, with special emphasis upon the teeth and digestive tract. Lectures, recitations, and laboratory work. 12 hours a week. DR. JACKSON, DR. LEE, and Assistants.

## BACTERIOLOGY AND IMMUNOLOGY

Professor WINFORD P. LARSON; Associate Professor ARTHUR T. HENRICI; Instructors ANNE BENTON, DAVID O. SPRIESTERSBACH; Assistant ROBERT C. GREEN.

### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1f	5	General Bacteriology.....	Soph.	Chemistry; biology
102s	4	Special Dental Bacteriol..	Jr.	Bact. 1f

1f,w,s,su. GENERAL BACTERIOLOGY. Preparation of culture media; morphology of bacteria; methods of staining and identification; anaerobic bacteria; principles of sterilization and disinfection; examination of air, water, milk; relations of bacteria to industries. 99 hours. 1f, special division for dental students. DR. HENRICI and Assistants.

102s. SPECIAL BACTERIOLOGY. General consideration of the mouth flora; bacteriology of the stomatitides, dental caries, alveolar abscess and pyorrhea; systemic infections secondary to bacterial diseases of the mouth and teeth. 66 hours. DR. HENRICI and Assistants.

## CHEMISTRY

Professors CHARLES F. SIDENER, WILLIAM H. HUNTER; Assistant Professor ISAAC W. GEIGER; Instructors LANDON A. SARVER, LEE I. SMITH.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
28s	4	Quantitative Analysis....	Fr.	Chem. 11
31f-32w	8	Elem. Organic Chemistry	Fr.	Chem. 28

28s. QUANTITATIVE ANALYSIS. A short introductory course covering the general principles and methods of quantitative analysis both gravimetric and volumetric. Typical problems will be assigned and attention given to proper laboratory practice. MR. SIDENER, MR. GEIGER, MR. SARVER.

31f-32w. ELEMENTARY ORGANIC CHEMISTRY. This course will include a discussion of important compounds of the aliphatic and of the aromatic series, and the preparation of typical substances. 207 hours. MR. HUNTER, MR. SMITH.

## DENTISTRY

Professors ALFRED OWRE, GEORGE M. DAMON, HENRY S. GODFREY, CHARLES A. GRIFFITH, WILLIAM F. LASBY, HERMAN A. MAVES, FORREST H. ORTON, JAMES M. WALLS, OSCAR A. WEISS, AMOS S. WELLS; Associate Professors PETER J. BREKHUS, MAX E. ERNST, ROBERT O. GREEN, RAY R. KNIGHT, HARRY C. LAWTON, ALFRED A. PAGENKOFF, GEORGE W. REYNOLDS, JOSEPH F. SHELLMAN, CHARLES A. WIETHOFF; Assistant Professors BERT G. ANDERSON, OSCAR COOPERMAN, NORMAN J. COX, CARL O. FLAGSTAD, WILLIAM A. GREY, LEE A. HARKER, HAROLD J. LEONARD, JOSEPH M. LITTLE, EVERETT E. MACGIBBON, WILLIAM McDougall, RICHARD S. MAYBURY, HERBERT C. NELSON, CARL OTTO, CARL H. PETRI, WILLIAM A. ROLL, CHARLES E. RUDOLPH; Instructors ARCHIBALD B. BUTTER, RUDOLPH W. DELTON, LAWRENCE M. DUPFEE, GEORGE D. ESTES, JAY M. FREEBURG, RAYMOND R. HENRY, CLARENCE HERMANN, HOUGHTON HOLLIDAY, ROY M. JERNALL, RAYMOND E. JOHNSON, EARL W. NELSON, PAUL S. PARKER, LYNN RADKE, HENRY V. REINKING, MARION R. STEVENS, CARL A. SWANSON, FRED C. THIERS, LOUIS W. THOM, INGWALD VEBLEN, WILLIAM D. VEHE, ANDREW J. WEISS, LEHMAN WENDELL, DANIEL E. ZISKIN.

## COURSES

No.	Credits	Title	Offered to	Prerequisite courses
<i>Division of Oral Anatomy</i>				
1f-2w-3w	9	Oral Anatomy.....	Fr.	
<i>Division of Crown and Bridge Work</i>				
4f-5w	3	Crown and Bridge Work.	Jr.	Dent. Anat. 3
6s	1	Crown and Bridge Work.	Jr.	1f-2w
7f-8w-9s	1	Crown and Bridge Work.	Sr.	1-2
50f,w,s*		Crown and Bridge Work.	Mech.	None

## COLLEGE OF DENTISTRY

*Division of Oral Diagnosis*

10f,w,s*	Dental Roentgenology.....	Jr., hyg.	
11f,w,s*	Diagnosis .....	Jr., sr.	
12f,w,s	Diagnosis .....	Sr.	None

*Division of Operative Dentistry*

13s	5	Operative Technic.....	Soph.	Dent. Anat. 3
14f-15w-16s*	3	Operative Dentistry.....	Jr.	2
17f-18w-19s*		Operative Dentistry.....	Sr.	3-4
51f,w,s		Operative Technic.....	Mech.	

*Division of Orthodontia*

20s	4	Orthodontia Technic.....	Jr., hyg.	Pros. Tech. 5
21f-22w-				
23s*	3	Orthodontia .....	Sr.	1
52f,w,s		Orthodontia Technic.....	Mech.	None

*Division of Prosthetic Dentistry*

24f-25w-26w	9	Prosthetic Technic.....	Fr.	None
27f-28w	8	Prosthetic Technic.....	Soph.	1-2
29f,w,s*	3	Prosthetic Practice.....	Jr.	3-4
30f,w,s*		Prosthetic Dentistry.....	Sr.	5-6
53f,w,s		Prosthetic Technic .....	Hyg., mech.	None

*Division of Periodontia and Oral Hygiene*

31f	2	Oral Hygiene.....	Jr., dent. hyg.	None
32w	3	Oral Pathology.....	Jr., dent. hyg.	Path. and bact.
33f,w,s*		Periodontia .....	Sr., dent. hyg.	Oral path.

*Division of Oral Surgery*

34s	2	Oral Surgery.....	Jr.	None
35w*	3	Oral Surgery.....	Sr.	1s

*Group in Child Dentistry*

40f,w,s*		Child Dentistry.....	Sr.	
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*Group in Hospital Dentistry*

41f,w,s*		Hospital Practice .....	Jr., sr., grad.	
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*Group in Thesis and Seminar*

42w,s	3	Thesis and Seminar.....	Sr., grad.	
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\* There are 50 credits assigned to Clinical Practice in the Department of Dentistry, but no specific number in any division

## ORAL ANATOMY

Professor GEORGE M. DAMON; Assistant Professors OSCAR COOPERMAN, LEE A. HARKER, CARL H. PETRI, CHARLES E. RUDOLPH.

1f-2w-3s. ORAL ANATOMY. A course of lectures and recitations on the anatomy and nomenclature of the teeth, and such laboratory work as drawing, dissecting, modeling, and carving of the teeth. Special attention given to the physiological function of tooth form and its practical application. DR. DAMON, DR. COOPERMAN, DR. HARKER, DR. PETRI, DR. RUDOLPH.

## CROWN AND BRIDGE WORK

Associate Professor ALFRED A. PAGENKOPF; Professors FORREST H. ORTON, AMOS S. WELLS; Associate Professors PETER J. BREKHUS, GEORGE W. REYNOLDS; Assistant Professors HERBERT C. NELSON, CARL OTTO, WILLIAM A. ROLL, CHARLES E. RUDOLPH; Instructor WILLIAM D. VEHE.

4f-5w. CROWN AND BRIDGE WORK TECHNIC. A course of lectures, demonstrations, and laboratory work that includes all the more important forms of crowns and bridges. DR. WELLS, DR. PAGENKOPF, DR. REYNOLDS, DR. MACGIBBON, DR. NELSON, DR. OTTO.

6s. CROWN AND BRIDGE WORK. A course of lectures, demonstrations, and clinical practice covering the simpler forms of crown and bridge work. DR. WELLS, DR. PAGENKOPF, DR. REYNOLDS, DR. MACGIBBON, DR. NELSON, DR. OTTO.

7f-8w-9s. CROWN AND BRIDGE WORK. A course of lectures and clinical practice covering the entire field of crown and bridge work. DR. ORTON, DR. BREKHUS, DR. ROLL, DR. VEHE.

5of,w,s. A course covering the laboratory technic and its practical application in the infirmary. DR. WELLS, MR. WEISS.

## ORAL DIAGNOSIS

Assistant Professor BERT G. ANDERSON; Associate Professors PETER J. BREKHUS, RAY R. KNIGHT; Assistant Professor WILLIAM McDougall; Instructors HOUGHTON HOLLIDAY, GEORGE A. MONTELIUS.

10f,w,s. DENTAL ROENTGENOLOGY. Lectures, demonstrations, and quizzes in electro-physics, coils and transformers, current supply, voltage amperage, types of tubes and controls, photographic materials, developing, placing, and exposing films, reading negatives, protection of patient and operator, legal liability. DR. KNIGHT.

11f,w,s. ORAL DIAGNOSIS. The personal and direct study of patients entering the clinic to determine the condition of their teeth and surrounding tissues and advise remedial measures. DR. BREKHUS, DR. ANDERSON, DR. McDougall, DR. HOLLIDAY, DR. MONTELIUS.

12f,w,s. ORAL DIAGNOSIS. Lectures, demonstrations, and quizzes. A study of selected cases from a medical point of view aiming to correlate the condition of the teeth with the patient's general health. DR. KNIGHT.

## OPERATIVE DENTISTRY

Professors JAMES M. WALLS, HENRY S. GODFREY; Associate Professors ROBERT O. GREEN, RICHARD S. MAYBURY, JOSEPH F. SHELLMAN; Assistant Professors NORMAN J. COX, JOSEPH M. LITTLE, WILLIAM C. NAEGELI, PAUL S. PARKER; Instructors ARCHIBALD B. BUTTER, LAWRENCE M. DURFEE, GEORGE D. ESTES, JAY M. FREEBURG, RAYMOND R. HENRY, MARION R. STEVENS, FRED C. THIERS, LOUIS W. THOM, WILLIAM D. VEHE, ANDREW J. WEISS; Teaching Assistant JOHN F. SPRAFKA.

13s. OPERATIVE DENTISTRY TECHNIC. This course consists of lectures, recitations, demonstrations, and laboratory work, 143 hours. DR. GREEN, DR. ESTES, DR. FREEBURG, DR. THOM, DR. SPRAFKA.

14f-15w-16s. OPERATIVE DENTISTRY. This course consists of lectures, recitations, and clinical practice. DR. WALLS, DR. GREEN, DR. MAYBURY, DR. SHELLMAN, DR. LITTLE, DR. NAEGELI, DR. PARKER, DR. BUTTERS, DR. HENRY.

17f-18w-19s. OPERATIVE DENTISTRY. A course of lectures, recitations, demonstrations, and clinical work. DR. WALLS, DR. GODFREY, DR. MAYBURY, DR. SHELLMAN, DR. COX, DR. LITTLE, DR. NAEGELI, DR. HENRY, DR. STEVENS, DR. VEHE.

51f,w,s. OPERATIVE DENTISTRY TECHNIC. A course of lectures and laboratory work and the practical application in the infirmary. DR. WALLS, MR. WEISS.

#### ORTHODONTIA

Professor OSCAR A. WEISS, WILLIAM F. LASBY; Associate Professors MAX E. ERNST, HARRY C. LAWTON; Assistant Professors CARL O. FLAGSTAD; Instructors RUDOLPH W. DELTON, ANDREW J. WEISS, LEHMAN WENDELL.

20s. ORTHODONTIA TECHNIC. A course of lectures, recitations, and laboratory work in the making of regulating appliances. DR. LAWTON, DR. DELTON, DR. WENDELL.

21f-22w-23s. ORTHODONTIA. A course of lectures, recitations, and clinical work. Every student is required to treat at least one case of irregularity of the teeth. DR. WEISS, DR. LASBY, DR. ERNST, DR. FLAGSTAD.

52f,w,s. ORTHODONTIA TECHNIC. A course of lectures and laboratory work covering the technic and its practical application. MR. WEISS.

#### PROSTHETIC DENTISTRY

Professors WILLIAM F. LASBY, GEORGE M. DAMON, OSCAR A. WEISS; Associate Professor HARRY C. LAWTON; Assistant Professors OSCAR COOPerman, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH; Instructors RUDOLPH W. DELTON, ROY M. JERNALL, ANDREW J. WEISS, LEHMAN WENDELL; Teaching Assistant ARTHUR F. JOHNSON.

24f-25w-26s. PROSTHETIC DENTISTRY. A course of lectures, recitations, and laboratory work covering the use of impression materials and the different processes of plate work. DR. DAMON, DR. COOPerman, DR. PETRI, DR. RUDOLPH, DR. JOHNSON.

27f-28w. PROSTHETIC DENTISTRY. A course of lectures, recitations, and laboratory work covering the principles of metallic dentures. DR. LAWTON, DR. DELTON, DR. WENDELL.

29f,w,s. PROSTHETIC DENTISTRY. A course of lectures, recitations, and clinical work in the simpler forms of dentures. DR. LASBY, DR. WEISS, DR. LAWTON, DR. FLAGSTAD, DR. JERNALL.

30f,w,s. PROSTHETIC DENTISTRY. A course of clinical work in special prosthesis, cleft palate, and facial restorations. DR. LASBY, DR. WEISS, DR. FLAGSTAD, DR. JERNALL.

53f,w,s. PROSTHETIC TECHNIC. A course of lectures, recitations, and laboratory technic covering equipment and arrangement of the dental laboratory, impression materials, study models, vulcanite and metallic dentures. DR. DAMON, DR. RUDOLPH, MR. WEISS.

#### PERIODONTIA AND ORAL HYGIENE

Assistant Professor HAROLD J. LEONARD; Instructors RAYMOND E. JOHNSON, LYNN RADKE, INGVALD VEBLEN.

31f. ORAL HYGIENE. Lectures and recitations on general and oral hygiene, including such general and special material as a prospective health officer, as well as dentist or dental hygienist should have. Emphasizes prevention of disease and maintenance of positive health. DR. LEONARD in coöperation with DR. SUNDWALL.

32w. ORAL PATHOLOGY. Lectures and recitations in which general pathology is used as a basis for the study of the special pathology of the teeth and other oral tissues, and in which causes are sought as a basis for rational therapeusis. DR. LEONARD.

33f,w,s. PERIODONTIA. An intensive demonstration and practice course in the causes, treatment, and prevention of gingivitis and periodonto clasia and of prophylaxis against caries. Special attention is paid to diagnosis and systemic complications. DR. LEONARD, DR. JOHNSON, DR. RADKE, DR. VEBLEN.

#### ORAL SURGERY

Professors CHARLES A. GRIFFITH, HERMAN A. MAVES; Associate Professor CHARLES WIETHOFF; Assistant Professor EVERETT E. MACGIBBON; Instructors CLARENCE HERMANN, EARL W. NELSON, CARL A. OMAN, HENRY N. REINKING, CARL A. SWANSON, DANIEL E. ZISKIN.

34w. ORAL SURGERY. A course of lectures, demonstrations, and recitations on conductive anesthesia and the technic of extraction. DR. GRIFFITH, DR. MAVES, and Assistants.

35f,w,s. ORAL SURGERY. An advanced course of lectures and clinical practice in conductive anesthesia, the technic of extraction, and minor oral surgery. DR. GRIFFITH, DR. MAVES, and Assistants.

## CHILD DENTISTRY

Instructor MARION R. STEVENS.

CHILD DENTISTRY. Lectures and clinic on children under eight years old taking up the preventative and reparative work, general health, diet, arch development, pathological mouth conditions, and the psychology of working with small children. DR. STEVENS.

## HOSPITAL DENTISTRY

Assistant Professor WILLIAM A. GREY; Instructors CLARENCE HERMANN, RAYMOND E. JOHNSON, CARL A. SWANSON, DANIEL E. ZISKIN.

41f,w,s. HOSPITAL PRACTICE. Practical hospital dentistry in the University hospitals, dispensary, and Minneapolis General Hospital, in oral surgery, periodontia and diagnosis, giving emphasis to the systemic relationship in oral disease and its treatment. DR. GREY, DR. HERMANN, DR. JOHNSON, DR. SWANSON, DR. ZISKIN.

6of,w,s. HOSPITAL DENTAL NURSE WORK. A course in practical assisting and hospital oral hygiene routine. MISS DOUGHERTY.

## THESIS AND SEMINAR

Professor ALFRED OWRE.

42w,s. A thesis and seminar course in theory and practice of dentistry, applied economics, jurisprudence, psychology, ethics. DR. OWRE and Associates.

## OUTSIDE READING

To emphasize the value of collateral reading to the students in this department it has been decided to offer credit for additional reading done in connection with professional courses. One credit will be given for each group completed; reading lists may be obtained from the chairman of each division or group. The work may, of course, be done in the summer. General questions may be asked concerning the subject-matter of the books read, and their value to the reader. When a list is completed, a report should be handed to the dean's office.

## MEDICINE

Professor S. MARX WHITE.

Given by members of the Department of Medicine in coöperation with other departments of the Medical School.

36s. CLINICAL MEDICINE. This course includes a discussion of the more important problems in clinical medicine with special reference to the conditions in which focal infections play a part. A discussion of the relations between dentistry and medicine is entered into.

## METALLOGRAPHY

Associate Professor OSCAR E. HARDER; Instructor RALPH L. DOWDELL.

## COURSE

No.	Credits	Title	Offered to	Prerequisite courses
159	2	Dental Metallography.....	Jr.	Chem.

**159. DENTAL METALLOGRAPHY.** Lectures, recitations, and demonstrations, taking up the most important metals with special reference to those used in dentistry and the study of dental alloys from the standpoint of metallography. MR. HARDER, MR. DOWDELL.

## MILITARY SCIENCE AND TACTICS: DENTAL CORPS

Professor HENRY H. RUTHERFORD, Lieutenant Colonel, Medical Corps, U.S.A.

A Reserve Dental Officers' Training Corps has been organized in the Dental School. The Surgeon General of the Army has detailed an officer as professor of Military Science and Tactics in this school.

## BASIC COURSE

Freshman and sophomore male dental students who are physically fit (whether they have previously had military training or not), may enroll in the Basic Course. If they enroll, they must finish the course, unless legally relieved. There is an optional summer camp of six weeks between the freshman and sophomore years. Drill and the wearing of uniform are required only at the summer camp.

## ADVANCED COURSE

Sophomore and junior, or junior and senior dental students who have had the above Basic Course or who have had the equivalent Basic R.O.T.C. Course in an academic college or elsewhere may be selected for the Advanced Course. Enrolment in this course is optional with the students so selected. Students in the Advanced Course receive about \$16 per month commutation of subsistence. Attendance in a six weeks' summer camp (the Medical Department Field Service School, at Carlisle, Pa.) is required of all students in the advanced course. The student may elect to take this camp upon the conclusion of the sophomore, junior, or senior year. Students receive \$30 per month in addition to board and lodging, while in camp; also traveling expenses to and from camp.

Upon graduation and completion of the Advanced Course, if recommended by the professor of Military Science and Tactics, dental students become eligible for commission in the Dental Officers' Reserve Corps.

1. *Administration.*—Lectures and recitations on military principles, policies and resources; Army Regulations, Field Service Regulations, Manual Medical Department, Tables of Organization and Equipment and handbooks appropriate for medical department instruction. In the senior year the instruction will be given with especial reference to the administration of medical department units.

2. *Materiel.*—Lectures, demonstrations, and recitations on the nature and uses of equipment and supplies—personal and for units. In the senior year the instruction will be given with especial reference to procurement, handling, storage, issue, and accounting.

3. *Technic.*—Lectures, demonstrations, and recitations on *clerical work*; identification; surveys and inspections; personal hygiene, prophylaxes and vaccinations; *first aid and transportation*; the management of sick calls, dispensaries, wards, operating and dressing rooms, laboratories, clinics, mess and diet kitchens, etc.

4. *Sanitation.*—Lectures and recitations on general hygiene,—using a standard textbook. In the senior year the work will be more purely of an administrative nature. Sanitary organizations (companies, etc.) will be formed on paper and actual problems studied and demonstrated, using maps and statistics.

5. *Evacuation.*—Lectures and recitations on the principles and purposes of the evacuation of sick and wounded in war. The chain of evacuation units,—their equipment and administration; tables of estimates of casualties; reconnaissance, information and transportation services, etc. In the fourth year the work will be more purely of an administrative nature. Evacuation organizations will be formed on paper and problems studied and demonstrated.

6. *Hospitalization.*—Lectures and recitations on the principles and purposes of army hospital operation. The chain of hospitals,—their equipment and administration; medical, surgical, laboratory, and special services, etc. In the fourth year the work will be more purely of an administrative nature. Hospital organizations will be formed on paper and problems studied and demonstrated.

7. *Mapping.*—Making and reading maps,—lectures, demonstrations, and recitations. (Sherrel.)

8. *Law.*—Lectures and recitations. (Manual of Courts Martial and Davis.)

#### PATHOLOGY AND PUBLIC HEALTH

Professor ELEXIOUS T. BELL; Instructors JAMES S. McCARTNEY, JR., HILDING C. ANDERSON; Teaching Fellow DONALD W. DE CARLE.

##### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
4W	6	General Pathology.....	Jr.	Gross anat., histol.
5S	6	Special Pathology.....	Jr.	General path.

4W. **GENERAL PATHOLOGY.** The principles of general pathology including circulatory disturbances, metabolic changes in cells and tissues, pigment deposits, inflammations, and tumors. Lesions illustrated by gross and microscopic specimens. General and special bacteriology. 108 hours. DR. BELL and Assistants.

5S. **SPECIAL PATHOLOGY.** Study of the pathology of selected diseases, tumors, and lesions with special reference to those affecting the mouth and dental structures. Exercises in gross and microscopic diagnosis. 99 hours. DR. BELL and Assistants.

## PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor EDGAR D. BROWN; Instructor PERCY WARD; Assistant ALLEN T. NEWMAN; Teaching Fellows J. PAUL QUIGLEY, HERMAN JENSEN.

### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
4w	4	Pharmacology .....	Jr.	.....
6w		Experimental Pharmacol..	Jr.	.....

4w. PHARMACOLOGY. The history, origin, nature, pharmacal preparations, and use of drugs, including the discussion of their physiologic, pharmacologic, and therapeutic actions. 44 hours. DR. HIRSCHFELDER.

6w. EXPERIMENTAL PHARMACOLOGY. Laboratory exercises upon the chemical composition and mode of action of typical drugs upon man and animals, primarily for students in dentistry. One exercise (2 hours) per week. DR. HIRSCHFELDER, DR. BROWN, MR. NEWMAN.

## PHYSIOLOGY

Professors ELIAS P. LYON, JESSE F. McCLENDON, FREDERICK H. SCOTT; Associate Professors RICHARD O. BEARD, CHAUNCEY J. V. PETTIBONE; Assistant Professors FRANCIS B. KINGSBURY, M. RUSSEL WILCOX; Instructor ESTHER GREISHEIMER; Assistant CHARLES C. GAULT.

### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
56f,s,su	5	Physiology .....	Soph.	Biology, organic chemistry
57w-58s	8	Physiology .....	Soph.	Biology, chemistry

56f,s,su. PHYSIOLOGY. An elementary course in physiologic chemistry. The components of the animal body; foods, digestion, the excreta and metabolism. MR. McCLENDON, MR. PETTIBONE, MR. KINGSBURY, and Assistants.

57w-58s. PHYSIOLOGY. An intermediate course in the physiology of muscle, nerve, blood, circulation, digestion, the nervous system and special senses; respiration, metabolism, nutrition and excretion. DR. LYON, DR. BEARD, MR. SCOTT, MR. GAULT, and Assistants.

## SURGERY

Professor ARTHUR C. STRACHAUER; Associate Professor CONRAD JACOBSON.

### COURSES

No.	Credits	Title	Offered to	Prerequisite courses
52f	2	Principles of Surgery....	Sr.	34s

52f. PRINCIPLES OF SURGERY. A study of the various surgical inflammations and processes: pathology and treatment. Principles underlying general surgical procedures as applied in dental practice. DR. JACOBSON.







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# *The Bulletin of the University of Minnesota*

*The School for Dental Hygienists  
Announcement for the Year  
1921-1922*



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# UNIVERSITY CALENDAR

**1921-1922**

**1921**

September	17	Saturday	Payment of fees closes, except for new students
September	20-27	Week	Examinations for removal of conditions and entrance examinations
			Registration period, Colleges of Science, Literature, and the Arts, and Agriculture, Forestry, and Home Economics
			Physical examinations for all new students
September	26-27		Registration days for all colleges not indicated above
September	27	Tuesday	Payment of fees for new students closes
September	28	Wednesday	Fall quarter begins, 8:30 a.m.
October	15	Saturday	Class Scrap Day; all classes to be dismissed for the fourth hour
October	20	Thursday	Senate meeting, 4:30 p.m.
November	5	Saturday	Home Coming Day; classes to be dismissed for the third and fourth hours
November	11	Friday	Armistice Day; a holiday
November	24	Thursday	Thanksgiving Day; a holiday
December	15	Thursday	Senate meeting, 4:30 p.m.
December	21	Wednesday	Fall quarter ends, Christmas vacation begins, 5:20 p.m.

**1922**

January	4	Wednesday	Christmas vacation ends, winter quarter begins, 8:30 a.m.
February	16	Thursday	Senate meeting, 4:30 p.m.
February	22	Wednesday	Washington's Birthday; a holiday
March	23	Thursday	Winter quarter ends, spring vacation begins, 5:20 p.m.
March	29	Wednesday	Spring vacation ends, spring quarter begins, 8:30 a.m.
May	18	Thursday	Senate meeting, 4:30 p.m.
May	30	Tuesday	Memorial Day; a holiday
June	11	Sunday	Baccalaureate service
June	13	Tuesday	Spring quarter closes, 5:20 p.m.
June	14	Wednesday	Fiftieth annual commencement
June	17-19		Registration days for summer session
June	20	Tuesday	Summer session begins
July	28	Friday	Summer session closes

AN ACT TO PROVIDE FOR THE LICENSING OF DENTAL NURSES AND PROVIDING THE DUTIES AND RIGHTS OF DENTAL NURSES.

Be it enacted by the Legislature of the State of Minnesota:

Section 1. *Who may become dental nurse.*—Any woman of good moral character, having a high school education and being 20 years of age or over, who is a graduate of a training school for dental nurses requiring a course of not less than two academic years, and approved by the board of dental examiners, or who is a graduate of a training school for nurses and has received at least three (3) months' clinical training in dental hygiene in any approved training school for dental nurses, may upon payment of ten (\$10.00) dollars be examined by said board on the subjects considered essential by it for a dental nurse. Such examination may, in the discretion of the board, be conducted by a part of the members of the board. If the applicant in the opinion of the board, successfully passes said examination, she shall be registered and licensed as a dental nurse. Any woman of good moral character and 20 years of age or more, who before June 1, 1919, shall register her name with the state board of dental examiners, may upon showing three (3) years' actual experience in the office of a licensed dentist, and upon complying with such requirements and passing such examination as the board of dental examiners shall require, be licensed as a dental nurse.

Sec. 2. *Employment of and practice by dental nurses.*—Any licensed dentist, public institution or school authorities may employ such licensed dental nurse. Such dental nurse may remove lime deposits, accretions and stains from the exposed surfaces of the teeth, and administer gas and ether anesthesia, as applied to dentistry, but shall not perform any other operation on the teeth or tissues of the mouth. She may operate in the office of any licensed dentist or in any public institution, or in the schools, under the general direction or supervision of a licensed dentist. The board of dental examiners may suspend or revoke, with power to reinstate, the license of any licensed dentist who shall permit any dental nurse operating under his supervision, to perform any operation other than that permitted under the provisions of this section, and it may also suspend or revoke, with power of reinstatement, the license of any dental nurse violating the provisions of this act, the procedure to be followed in the case of such suspension, revocation, or reinstatement, shall be the same as that prescribed by law in the case of suspension, revocation or reinstatement of a licensed dentist.

Sec. 3. *Payments to be made to Board of Dental Examiners.*—Before the first of May in each year, every licensed dental nurse shall pay to the board of dental examiners a license fee of one (\$1.00) dollar and in default of such payment, the board may upon hearing and upon twenty

(20) days' notice revoke the license of the nurse in default; but the payment of such fee on or before the time of hearing, with such additional sum not exceeding five (\$5.00) dollars, as may be fixed by the board, shall excuse any default. The board may collect such fee by suit.

Sec. 4. *Licensing of dental nurses authorized by another state.*—Any female dental nurse or dental hygienist duly licensed to practice as such in another state having and maintaining an equal standard of laws regulating the practice of dental nurses with this state, and who is of good moral character and is desirous of removing to this state, and deposits in person with the board of dental examiners a certificate from the examining board of the state in which she is licensed, certifying to the fact of her being licensed and that she is of good moral character and professional attainments, may upon the payment of a fee of twenty (\$20.00) dollars, at the discretion of the board, be granted a license to practice in this state without further examination. As to any person so applying and who has been licensed in a state not maintaining an equal standard of laws within this state, the board may license such person upon the payment of the fee above provided for, furnishing the same evidence as to licensing, good moral character, and professional attainments, and passing such further examination as the board of dental examiners shall deem necessary.

Sec. 5. This act shall take effect from and after its passage.

Approved April 15, 1919.

# THE SCHOOL FOR DENTAL HYGIENISTS

HAROLD J. LEONARD, B.A., D.D.S., Superintendent

The School for Dental Hygienists has been established to meet the need created by the foregoing act. The Board of Regents in July, 1919, directed the College of Dentistry to organize the school, and it has been in operation since September, 1919.

It is the purpose of the faculty to conduct a school for the scientific training of the dental hygienist. The University association of the Medical School, the University Hospital, the School of Nursing, the College of Dentistry, and the College of Science, Literature, and the Arts, makes it possible to do this. It is the desire of the faculty to standardize the education of women for this profession in the Northwest.

The course consists of two years of nine months each leading to the degree of Graduate Dental Hygienist (G.D.H.). The work of the first year is largely fundamental science and laboratory work, much of it being taken in the Department of Medical Science with probationary students of the School of Nursing.

The second year's work is largely clinical, the student having practical training in the various phases of oral hygiene work, dental nursing, and dental laboratory work, on the patients of the dental infirmary and the University Hospital. Courses in business office work and rhetoric and public speaking are included.

It is the desire to prepare the student so that in practice she may be able to fill adequately whatever position she may take, whether as general office and prophylaxis assistant in a dental office, or as dental hygienist and teacher and lecturer in dental hygiene in schools and mercantile and industrial plants, or as a part of the municipal, county, and state public-health systems. There is a large field and a great future for this work, and it was the evident desire of the legislature that framed the act, and is the desire of the faculty, that the training and requirements for the work should be such as to create high professional standards and to prepare a body of workers who can contribute economically in high degree to the public welfare.

## FACULTY

LOTUS DELTA COFFMAN, Ph.D., President

WILLIAM WATTS FOLWELL, LL.D., President Emeritus

CYRUS NORTHROP, LL.D., President Emeritus.

ALFRED OWRE, B.A., M.D., C.M., D.M.D., Dean of the College of Dentistry, Professor of the Practice of Dentistry, Chairman of the Department of Dentistry

HAROLD J. LEONARD, B.A., D.D.S., Assistant Professor of Oral Hygiene and Pathology, and Chairman of the Division of Periodontia and Oral Hygiene, and Superintendent for Dental Hygienists

BERT G. ANDERSON, D.D.S., Assistant Professor of Oral Surgery, Chairman of the Division of Oral Diagnosis

RICHARD O. BEARD, M.D., Associate Professor of Physiology

GEORGE M. DAMON, D.D.S., Professor of Prosthetic Dentistry and Oral Anatomy and Chairman of the Division of Oral Anatomy

WILLIAM A. GREY, D.D.S., Assistant Professor of Oral Surgery and Chairman of the Group in Hospital Dentistry

CHARLES A. GRIFFITH, D.D.S., Professor of Oral Surgery and Chairman of the Division of Oral Surgery

LEE A. HARKER, D.D.S., Assistant Professor of Oral Anatomy

ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology

CLARENCE M. JACKSON, M.S., M.D., Professor of Anatomy

WILLIAM I. KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry

RAY R. KNIGHT, B.A., M.D., Associate Professor of Roentgenology

JESSIE S. LADD, Dean of Women

WINFORD P. LARSON, M.D., Professor of Bacteriology and Immunology

WILLIAM F. LASBY, B.A., D.D.S., Professor of Prosthetic Dentistry and Orthodontia and Chairman of the Division of Prosthetic Dentistry

ORA M. LELAND, B.S., C.E., Dean of the School of Chemistry

ELIAS P. LYON, Ph.D., M.D., Professor of Physiology

WILLIAM McDougall, D.D.S., Assistant Professor of Oral Surgery

HERMAN A. MAVES, D.D.S., Professor of Oral Surgery

J. ANNA NORRIS, M.D., Professor of Physical Education for Women

LOUISE M. POWELL, R.N., Superintendent of the School of Nursing

CHARLES E. RUDOLPH, D.D.S., Assistant Professor of Prosthetic Dentistry and Oral Anatomy, Superintendent of the Course for Dental Mechanics

JOSEPH F. SHELLMAN, D.D.S., Associate Professor of Operative Dentistry

JOHN SUNDWALL, M.D., Professor of Hygiene, University Health Officer

JOSEPH M. THOMAS, Ph.D., Professor of Rhetoric

JAMES M. WALLS, D.M.D., Professor of Operative Dentistry and Head of the Division of Operative Dentistry

MILDRED WEIGLEY, B.S., Professor of Home Economics

- OSCAR A. WEISS, D.M.D., Professor of Prosthetic Dentistry and Orthodontia, and Head of the Division of Orthodontia  
AMOS S. WELLS, B.A., D.D.S., Professor of Crown and Bridge Work  
S. MARX WHITE, B.S., M.D., Professor of Internal Medicine  
CHARLES A. WIETHOFF, D.D.S., Associate Professor of Oral Surgery  
CECIL C. BEAN, M.A., Instructor in Rhetoric  
ANNE BENTON, M.A., Instructor in Pathology and Bacteriology  
LEONARD V. DOWNING, D.D.S., Instructor in Prosthetics  
HALLY J. FISHER, R.N., Instructor in Home Nursing  
ESTHER M. GREISHEIMER, B.S. in E., Ph.D., Instructor in Physiology  
MARGUERITE GRIMM, B.A., Instructor in Office Practice  
CLARENCE M. HERMANN, D.D.S., Instructor in Oral Hygiene  
HOUGHTON HOLLIDAY, B.A., D.D.S., Instructor in Diagnosis and Oral Surgery, Superintendent of the Infirmary  
RAYMOND E. JOHNSON, D.D.S., Instructor in Periodontia  
ELIZABETH PIERCE, Instructor in Nursing  
W. LYNN RADKE, D.D.S., Instructor in Periodontia  
GRACE M. ROCKWOOD, B.A., Instructor in Physical Education for Women  
MARION STEVENS, B.A., D.D.S., Instructor in Operative Dentistry  
GERTRUDE THOMAS, Dietitian and Instructor in Dietetics  
INGVALD VEBLEN, D.D.S., Instructor in Periodontia  
ANDREW J. WEISS, Instructor in Prosthetic Dentistry  
DANIEL E. ZISKIN, D.D.S., Instructor in Oral Surgery  
HERVEY H. BARBER, B.A., Assistant in Chemistry  
EDITH L. DOUGHERTY, Assistant in Hospital Dentistry  
RUTH HERRICK, B.S., Teaching Fellow in Anatomy  
ALLEN NEWMAN, M.Sc., Assistant in Oral Anatomy  
JOHN P. QUIGLEY, B.S., Teaching Fellow in Pharmacology

## GENERAL INFORMATION

The course of study in the School for Dental Hygienists for the school year 1921-22 will begin September 28, 1921. Registration days are the two days preceding. The first quarter is almost entirely devoted to medical sciences and is done at the University Hospital, Millard Hall, and the Anatomy Building after which the work will be done almost entirely in the Dentistry Building. The fall quarter is the only time at which beginning students will be admitted. Rules for the guidance of students are printed in a separate booklet.

### REGISTRATION

Applicants for admission may obtain credential blanks from the office of the registrar or from the superintendent of the school, Dr. Harold J. Leonard, College of Dentistry, University of Minnesota. These should be filled out and sent by the principal or superintendent of the high school or preparatory school to the registrar's office. Upon receipt of the credentials at the University, the registrar will notify the applicant with regard to her admission and will send directions for registration. For further information in regard to registration and to the general requirements for admission to the University, application may be made for the bulletin of general information.

### REQUIREMENTS FOR ADMISSION

The School for Dental Hygienists requires for admission graduation from an approved high school or other preparatory school on the accredited list. Preference, however, will be given to women of superior preliminary training. Applicants must be not less than eighteen nor more than thirty-five years of age. They must submit to the committee in charge of the school satisfactory evidence of physical and mental fitness and of good character, and will undergo a general physical examination by the school physician. The beginning class is limited to twenty-five students.

### FEES

Tuition fee (per quarter).....	\$25.00
(except for the first two quarters, which together are \$35)	
Deposit (first quarter only).....	5.00
Health fee (per quarter).....	2.00
Minnesota Union or Shevlin Hall (per quarter).....	1.00
Post-office box (per quarter).....	.20
Special fees:	
Examination for removal of conditions.....	1.00
Examinations for credit (after first six weeks in residence).....	5.00
Special examinations.....	5.00
Chemistry deposit.....	5.00

## PENALTY FEES:

*Registration penalties.*—A penalty fee for late registration, late change of registration, or late payment of fees shall be two dollars (\$2.00) and one dollar (\$1.00) additional for each day of delay after classes begin, provided that no student shall pay more than twelve dollars (\$12.00) of penalty in any given quarter.

## ADVANCED STANDING

Graduates of approved training schools for nurses will be admitted for advanced standing in the School for Dental Hygienists, and should be able to complete the remainder of the work required for the degree of Graduate Dental Hygienist in one college year. Graduate nurses will be given permission to enter the school for one quarter's work to qualify them according to the law to take the state-board examination for a license to practice dental nursing. Such students will not be candidates for the degree of Graduate Dental Hygienist, and will be given University credit only in so far as it would apply if sufficient work to qualify for the degree were taken later.

## COURSE OF STUDY

### FRESHMAN YEAR

	HOURS			TOTAL
	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	
Elementary Anatomy.....	..	36	..	36
Elementary Physiology.....	96	..	..	96
Elementary Chemistry.....	36	..	..	36
Elementary Pharmacology.....	..	48	..	48
Elementary Bacteriology.....	96	..	..	96
Physical Culture.....	24	..	..	24
Exercises in Lettering.....	..	12	..	12
Personal Hygiene.....	..	12	..	12
Nursing Ethics.....	..	12	..	12
Foodstuffs .....	..	12	..	12
Food Preparation.....	..	..	48	48
Practical Nursing.....	..	..	60	60
Prosthetic Technic.....	..	72	84	156
Oral Anatomy.....	48	36	..	84
Hospital Dental-Nurse Work.....	..	24	24	48
Rhetoric .....	..	..	36	36
Office Practice.....	..	48	60	108
	<hr/>	<hr/>	<hr/>	<hr/>
	300	312	324	936

### SENIOR YEAR

	HOURS			TOTAL
	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	
Oral Hygiene.....	24	..	..	24
Oral Pathology.....	..	36	..	36
Clinical Medicine.....	..	..	24	24
Theory and Practice.....	..	..	12	12
Principles of Dentistry.....	12	12	..	24
Anesthetics and Operating Room Technic	12	..	..	12
Rhetoric and Public Speaking.....	36	36	36	108
Clinical Pathology.....	..	..	12	12
Prophylaxis (Practice).....	156	156	156	468
Anesthetics and Operating Room Technic (Practice).....	72	72	72	216
Dental Assisting (Practice).....	72	72	72	216
Dental Roentgenology (Practice).....	36	36	36	108
Dental Laboratory (Practice).....	36	36	36	108
	<hr/>	<hr/>	<hr/>	<hr/>
	456	456	456	1,368

## DEPARTMENTAL STATEMENTS ANATOMY

Professor CLARENCE M. JACKSON; Teaching Fellow RUTH HERRICK.

- 1W. ELEMENTARY ANATOMY. The general properties and development of tissue cells; the development of the human embryo. The description and demonstration of the osseous, muscular, nervous, circulatory, respiratory, excretory, and reproductive systems. 3 hours a week.  
DR. JACKSON, MISS HERRICK.

## BACTERIOLOGY AND IMMUNOLOGY

Professor WINFORD P. LARSON; Instructor ANNE BENTON.

- 6f. ELEMENTARY BACTERIOLOGY. The principles and technic of general bacteriology. Studies in the morphologic and biologic characters of the common bacteria. Preparation of culture media. Disinfectants and disinfection. Bacteriology of water and food products. 8 hours a week. DR. LARSON, MISS BENTON.

## CHEMISTRY

Professor ORA M. LELAND; Assistant HERVEY H. BARBER.

- 5f,s. ELEMENTARY CHEMISTRY. A brief study of matter and energy; of chemical and physical changes; the fundamental laws of chemistry; chemical elements and compounds; the qualitative and quantitative composition of foods, air, and water. 3 hours a week. MR. BARBER.

## DENTISTRY

### ORAL ANATOMY

Professor GEORGE M. DAMON; Assistant Professor LEE A. HARKER; Assistant ALLEN T. NEWMAN.

- 1f-2w. ORAL ANATOMY. A course of lectures and recitations on the anatomy and nomenclature of the teeth, and such laboratory work as drawing, dissection, modeling, and carving of the teeth. 84 hours.  
DR. DAMON, DR. HARKER, MR. NEWMAN.

## OFFICE PRACTICE

Instructor MARGUERITE GRIMM.

- 1W. A short course of study and practice in typewriting. 4 hours per week. MISS GRIMM.
- 2s. A short course in office practice including elementary bookkeeping, handling patients, office etiquette, ethics, etc. 5 hours a week. Miss GRIMM.

## ORAL DIAGNOSIS

Associate Professor ROY R. KNIGHT.

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